

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

FORT IRON & METAL COMPANY,

Plaintiff,

v.

CITY OF DETROIT, and

DAVID BELL,

Defendants.

Civil No. 21-12886

HON. PAUL D. BORMAN

MAG. ANTHONY P. PATTI

ARGUMENT REQUESTED

**EMERGENCY VERIFIED MOTION FOR PRELIMINARY INJUNCTION
BY PLAINTIFF FORT IRON & METAL COMPANY**

Under Rule 65, Plaintiff Fort Iron & Metal Company (“**Fort Iron**”) petitions the Court for an immediate preliminary injunction that enjoins the City from: (1) enforcing an Emergency Corrective Order (“**ECO**”) issued on December 16, 2021, in retaliation for the filing of this lawsuit; and (2) issuing another such order pending the final disposition of this case or further order of the Court.¹

Fort Iron sought but did not obtain concurrence in the relief requested. Local Rule 7.1(a)(2) (ED Mich. 2020). Fort Iron has repeatedly asked Defendants to withdraw its threat of a shutdown or otherwise stay enforcement of the ECO and, through numerous correspondence leading up to the filing of this motion, has offered support for its request. Fort Iron made this specific request again most recently in a

¹ Fort Iron will move to supplement its complaint under Rule 15(d) regarding the subsequent ECO and failure/refusal of the City to retract the ECO.

letter to the City of Detroit Law Department on December 17, 2021, wherein Fort Iron stated its intent to seek relief from the Court if the City did not accede to its request for stay of the ECO. See Exhibit H to the accompanying Brief.

Respectfully submitted,

BUTZEL LONG, P.C.

Dated: December 23, 2021

/s/ Daniel J. McCarthy

DANIEL J. MCCARTHY (P59457)

LOUIS F. RONAYNE (P81877)

201 West Big Beaver Road, Suite 1200

Troy, MI 48084

(248) 258-1616

mccarthyd@butzel.com

ronayne@butzel.com

Counsel for Fort Iron & Metal Company

KAVEH KASHEF (P64443)

Fort Iron & Metal Company

9607 Dearborn St

Detroit, MI 48209-2511

(313) 971-7023

kkashef@fortiron.com

Co-Counsel for Fort Iron & Metal Company

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BUTZEL LONG, PC
Daniel J. McCarthy (P59457)
Louis F. Ronayne (P81877)
201 West Big Beaver Road, Suite 1200
Troy, MI 48084
(248) 258-1616
mccarthyd@butzel.com
ronayne@butzel.com
Counsel for Fort Iron & Metal Company

Kaveh Kashef (P64443)
Fort Iron & Metal Company
9607 Dearborn St
Detroit, MI 48209-2511
kkashef@fortiron.com
Co-Counsel for Fort Iron & Metal Company

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QUESTION PRESENTED

Should the Court enter a preliminary injunction enjoining Defendants from enforcing the ECO or issuing any other kind of order or directive that would deprive Fort Iron of its constitutional right to due process and shutdown Fort Iron's operations pending the final disposition of this case or a future order of the Court?

**CONTROLLING OR
MOST APPROPRIATE AUTHORITY**

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Fort Iron respectfully submits this brief in support of its emergency motion for preliminary injunction. Civil Rule 7.1(d)(1)(A) (ED Mich. 2020).

PERTINENT BACKGROUND

On September 11, an event occurred at the intersection of Fort Street and Dearborn Street (the “**Event**”) that included, or was precipitated by, a water main break, a gas main break, and the formation of a “bubble” in the road on Dearborn Street. Verified Compl. ¶ 3, ECF 1, PageID.2. The Event also affected Fort Iron’s facility at the corner of Fort and Dearborn, where it stored a quantity of scrap recycling materials. The day after the Event, officials with the City of Detroit (the “**City**”), including the Deputy Director for the Department of Public Works, cooperated with Fort Iron to ensure that the City’s investigation and repair efforts did not interfere in any way with Fort Iron’s operations at its facility. *Id.*, at ¶¶ 2–3. However, despite this initial cooperation, faced with heavy news coverage as a result of the Event, the City abruptly reversed course on September 13. Without prior notice or cause, representatives from the City’s building safety department, escorted by officers from the 4th Precinct of the Detroit Police Department, shut down all of Fort Iron’s operations. *Id.*, at ¶ 4.

After the City shut down Fort Iron’s operations, Fort Iron informed Defendant Bell directly that, since the day after the Event, it had engaged the services of the engineering firm Spalding DeDecker, which was working on a report with respect to the safety of Fort Iron’s operations. Defendant Bell responded by requesting a “signed and sealed report from a licensed local engineering firm attesting to the safety of Fort Iron’s operations.” In two correspondences, dated September 13 and

14, respectively, Fort Iron demanded that its operations be reopened and included the September 13, 2021 report from Spalding DeDecker (the “Spalding DeDecker Report”). (Exhibit A).

On the evening of September 15, numerous representatives from the City and the Great Lakes Water Authority (“GLWA”) (including Defendant Bell and several outside engineers) appeared at Fort Iron’s facility strongly urging that Fort Iron work throughout the night to remove materials from the area of its facility that had been impacted by the Event (“Area 1”). Prior to Fort Iron engaging in this effort, based upon the delivery of the Spalding DeDecker report, Defendant Bell vacated his September 13 shutdown order. Specifically, Defendant Bell, the director of the City’s Department of Buildings, Safety, Engineering, and Environment (“BSEED”) wrote: “*This is the all clear to begin operations* and remove the mill scale from the pile at the corner of Dearborn and Fort via the joint effort we discussed tonight.”² Abdul Abbas, a BSEED associate engineer, likewise stated:

[S]ince the site was inspected by Spalding ... it is my opinion that Fort Iron can reasonably resume operations with strict adherence to [Spalding]’s recommendations and the Fort Iron’s SOP operation guidelines including the way using of the facility as provided by the aerial photos.³

After Defendant Bell vacated the shutdown order, Fort Iron worked through the night until dawn (with representatives of the City and GLWA present), began

² Exhibit B, Email from David Bell, Director of BSEED, to Kaveh Kashef, copied to then City of Detroit Counsel Lawrence Garcia. (Sept. 15, 2021).

³ *Id.*, Email from Abdul Abbas, BSEED Associate Engineer, to City Building Official David Bell. (Sept. 15, 2021).

removing materials from Area 1 and relocating them to various other locations throughout the rest of Fort Iron's facility which was unaffected by the event ("Area 2"). While the City's engineers identified what they considered to be their preferred "safe" elevation of Area 1 (591 feet), neither the City, GLWA nor their engineers stated any preference or concern regarding the relocation of Fort Iron's materials anywhere else within Area 2. In fact, Fort Iron asked whether or not removing the materials from its facility altogether would be necessary and the City indicated that it was not. Further, even until now, at no time has the City offered any guidance or directive that Fort Iron remove or relocate materials within Area 2.

For a month after the City vacated its shutdown order, Fort Iron engaged in its regular business operations with no interference from the City. To the contrary, Fort Iron and the City cooperated with one another in all respects. For example, the City ensured that none of the repair work it or any other parties were performing interfered with Fort Iron's operations. Fort Iron, for its part, continued to remove materials from Area 1 to various locations around Area 2 under the watch of its engineers and engineers for the City and carefully and systematically reduced the elevation of Area 1 to under the City's requested elevation of 591 feet. Fort Iron also cooperated with other stakeholders, contractors, and departments such as the Department of Public Works, DTE Energy and Comcast as they engaged in their repair and remediation efforts. Notably, when Fort Iron's engineers were on site drilling borings into the soil, the City's engineers were sitting immediately beside them gathering their own data from the drilling. In short, no requests by the City or others were rejected by Fort Iron.

On October 13, at the request of Fort Iron, representatives of Fort Iron and the City (including then-Corporation Counsel, Lawrence Garcia, the Deputy Director of DPW, the City's Chief Operating Officer, Hakim Berry, and Defendant Bell via phone) met at the City offices to discuss the status of the City's efforts. Specifically, Fort Iron inquired as to the status of the City's investigation, sought to ensure the investigation would not be cursory, and requested discussion regarding recent public statements made by City representatives (including the Mayor and Chief Operating Officer) regarding the Event. At the meeting, the City advised that it had no intention of blaming Fort Iron for the Event and that the City's report would be issued "in a week." Also, for the first time, the City requested "a report" from Fort Iron's geotechnical engineers (G2 Consulting) regarding the safety of Fort Iron's operations. During the discussion, Fort Iron and Defendant Bell specifically discussed Fort Iron providing a "signed and sealed report" from G2 Consulting like the Spalding DeDecker Report.

A week later, on October 21, the City issued a follow-up correspondence regarding it requested report which was significantly broader in scope than what had been discussed on October 13 (Exhibit C). Counsel for Fort Iron and Corporation Counsel engaged in a series of phone calls to clarify and reach an understanding regarding the discrepancy between what had been discussed on October 13 and what was requested in the October 21 email. Based on that understanding, Fort Iron engaged G2 Consulting to prepare a report that addressed the safety of Fort Iron's current operations and delivered that report to the City on November 18. In that report, among other things, G2 Consulting opined:

We performed geotechnical investigations, reviewed instrumentation data, review geotechnical data performed by others, as well as other information provided by you. Finally, we performed calculations and analyses using the data mentioned. Based on our review and analyses, ***it is our opinion that the current operations have a stability factor of safety greater than 1.3. As such, it is our opinion that these operations are acceptable.***⁴

G2 Consulting's report further stated: "Based on our observation and analyses along with the continued ground movement monitoring, it is our opinion that the current operations in Area No. 2 are stable, ***and we do not recommend any changes from current operations in this Area No. 2.***"⁵

After Fort Iron delivered the G2 Consulting Report, counsel for Fort Iron and Corporation Counsel engaged in additional phone calls and emails to address a way for the City and Fort Iron's engineers to discuss what additional data the City's engineers would like to review which supported the G2 Consulting Report. Up to December 1, 2021, Corporation Counsel and Fort Iron were working on scheduling this meeting. Exhibit E.

Despite the two independent reports opining as to the safety of Fort Iron's operations, three months of safe operations, ongoing cooperative dialogue and goodwill between the City and Fort Iron and direct communications between counsel to schedule a meeting, on the evening of Friday, December 3, the City threatened to shut down all of Fort Iron's storage operations, including the unaffected Area 2 unless Fort Iron would agree to an "immediate" meeting on Saturday, December 4

⁴ Exhibit D, "G2 Consulting Report".

⁵ *Id.*, at p 2 (emphasis added).

or Monday December 6. The threat was conveyed to counsel for Fort Iron, who advised that he was in his car with his family traveling to Indianapolis for a swim meet. For this reason, Fort Iron's counsel advised that a meeting on Saturday was impossible, Monday would be difficult, but suggested a meeting on Wednesday December 8. (Exhibit F).

After Fort Iron issued the December 4 letter, it made repeated efforts to contact representatives of the City to confirm a meeting and ensure Fort Iron would not be shut down, but its communications were ignored. Finally, in the evening of December 5, Corporation Counsel contacted Fort Iron's counsel, at which time Fort Iron agreed to a Monday meeting. Corporation Counsel advised that he would be in touch to confirm the meeting. No confirmation was ever given and Fort Iron's December 6 email again seeking to confirm the December 6 meeting the City demanded (see Exhibit G) was ignored.

Given the City's arbitrary and unlawful use of its threat of a "shutdown" as an attempt to coerce behavior, as well as the existential threat such a shutdown creates for Fort Iron, Fort Iron commenced this action to, among other things, ensure the City does not continue to violate Fort Iron's constitutional rights and challenging the constitutionality of the authority on which the City and its agent, Defendant Bell, purport to rely.

Despite having its arbitrary actions disclosed in the filing of this action, the City elected to respond to the filing by engaging in various retaliatory actions which have only enhanced the unlawfulness of its conduct.

On December 15, one week after Fort Iron filed this action, an officer from DPD issued a "warning" to Fort Iron due to the presence of temporarily stopped

truck traffic attempting to enter Fort Iron’s facility. In the entire three months prior, while Fort Iron was engaged in full operations with occasionally stopped truck traffic, DPD had not once appeared regarding the traffic. Moreover, the only reason why the truck traffic was stopped on Dearborn Street was because the City’s operations regarding the event precluded Fort Iron from using its adjacent property where trucks would usually wait prior to entering the facility. Counsel for the City advised that the DPD arrived due to a neighborhood “complaint.”⁶

On the next day, December 16, Inspector Carl Craik from BSEED arrived unannounced at Fort Iron’s facility for an “inspection.” Mr. Craik arrived alone, without geotechnical tools of any kind, without safety equipment, and without a geotechnical engineer. Mr. Craik was informed by counsel for Fort Iron that he would not be allowed to inspect the facility, but that his office could contact counsel, advise as to the proposed purpose of the inspection and a mutually agreeable date could be selected for a planned and useful inspection. Undeterred, Mr. Craik retreated to his vehicle and immediately returned with an arbitrary, confusing, and retaliatory Emergency Correction Order (“**ECO**”).⁷

Among other things, the ECO stated that Fort Iron failed an “inspection.” No inspection ever occurred. The ECO once again threatened to shut down Fort Iron’s

⁶ It should be noted that most of the residential neighborhood that surrounds Fort Iron’s facility is owned by affiliate companies of Fort Iron.

⁷ Exhibit H, Emerg. Correction Order (Dec. 16, 2021). Since no “emergency inspection” had occurred before the City issued the order and the order provided on its face that the company was predestined to fail an inspection, Fort Iron believes the ECO is unlawful retaliation for filing this lawsuit.

entire operation if Fort Iron did not “comply” with the ECO by December 21.⁸ The City has since voluntarily extended its “compliance” deadline to January 7, making its claim of emergency dubious.

The only reference in the ECO to a basis for its issuance is a passing mention of “the City’s engineering report,” which is a reference to the December 13 report by Somat Engineering (the “Somat Report”). However, the Somat Report is not a report regarding Fort Iron’s operations. The report exclusively relates to the event and, at most, relates to Area 1 on Fort Iron’s property – the area where Fort Iron has repeatedly stated (on its own and at the recommendation of its experts) it would not utilize in its operations.⁹

Since the City first threatened a shutdown, Fort Iron has sought to reopen communications with the City, without success. For example, in his December 4 correspondence, counsel for Fort Iron identified numerous “bullet point” requests in the City’s October 21 email (repeated in the ECO) that were vague, asked questions regarding the bullet points and provided answers to the bullet points. The City offered no response.

After issuance of the ECO, Fort Iron has sent several detailed correspondence that have, among other things: (1) provided the back-up data used by G2 Consulting to

⁸ *Id.*, at “Commercial Emergency 1.

⁹ Exhibit I, Report by Somat Engineering (Dec. 13, 2021), did ***not*** address or evaluate Fort Iron’s ***current operations***, it evaluated the event: “we have completed the geotechnical evaluation for the ground upheaval incident at the intersection of Fort and Dearborn Streets in Detroit, Michigan.” Somat’s report, which relied on only two soil borings taking outside of Fort Iron’s facility, makes no reference whatsoever to Fort Iron’s operations.

support its opinion as to the safety of Fort Iron's operations, (2) demonstrated the lack of an emergency, (3) demonstrated Fort Iron's compliance with the ECO and, perhaps most importantly, (4) demonstrated Fort Iron's desire to work cooperatively with the City to avoid the need for litigation. (Exhibit J, December 16, 17, 20 and 22 correspondence). The City has repeatedly ignored the substance of its correspondence and has elected to put on blinders and not engage in any meaningful dialogue.

Before the ECO, Fort Iron provided the City with reports from two of the foremost engineers in the state, Spalding DeDecker and G2 Consulting. Both experts have opined that Fort Iron is safe to operate, subject to certain conditions (*e.g.*, avoiding Area 1, engaging in ground movement monitoring, and reducing the pile heights of its high-density stockpiled materials). Fort Iron has complied with all the stated conditions of its experts and, in material ways, has gone beyond the conditions. At a significant cost, Fort Iron has engaged in daily ground monitoring (for months, twice daily), which has demonstrated no relevant ground movement.¹⁰ Fort Iron has not only reduced the heights of its high-density materials, but it has also systematically reduced its overall quantities of those materials beyond what has been recommended. Most importantly, due to the City's arbitrary actions, it has committed to continue to massively reduce its quantities of these materials to obviate any possible concern by the City. Since the issuance of the ECO, Fort Iron has given the City all of its soil borings and lab testing data, a vibration monitoring report, all of its monitoring data, photographs depicting the reduction of high-density

¹⁰ Upon information and belief, the City's engineers ceased its monitoring efforts well over a month ago.

materials and, most importantly, written confirmation that not only will it not add materials, it has been and will continue to massively reduce the quantities of high-density materials from its facility.

The City's actions are even more egregious, and demonstrate selective enforcement, when compared to its approach to the City, at large. Fort Iron has one of the smallest stockpiles of materials in the City. Fort Iron is unaware of any actions (let alone, threat of shutdown) commenced by the City against any of Fort Iron's neighbors such as Detroit Salt (which stockpiles approximately 1,000,000 tons of salt immediately adjacent to the Marathon refinery), Zug Island, Edward C. Levy concrete, Cleveland Cliffs (formerly Rouge Steel) and others, all of whom have stockpiles significantly greater than Fort Iron. By way of example of its inconsistent and targeted approach towards Fort Iron, the City recently allowed Detroit Bulk Storage, Inc. ("**DBS**") to engage in operations, despite the fact that DBC's stockpiling dwarfs Fort Iron's, has had two bulk storage incidents, has had materials go into the Detroit River, and who undisputedly violated agreements with the City.¹¹ Despite this track record, the City and DBS entered into that agreement based on significantly less information regarding safety than Fort Iron has provided in this case.

Given that none of the empirical data provided by Fort Iron – in the face of no support for the City's position – has in any way assuaged the City in its attempt to enforce a wrongful order and threaten to shut down Fort Iron's operations, Fort Iron

¹¹ See, e.g., Exhibit K, Amended Order, *Detroit Bulk Storage, Inc. v. City of Detroit*, No. 21-16869-CB (Wayne Cir. Bus. Ct., Mich., Dec. 22, 2021).

is forced to file this motion and seek a preliminary injunction from this Court allowing it to maintain its status quo of continued operation—a status quo that the City created and permitted since September 15, 2021.¹²

The bottom line is that a preliminary injunction maintaining the current status quo of Fort Iron’s ongoing operations is paramount. The ECO, which demands that Fort Iron not add any additional materials to its facility must be declared “complied with”¹³ or is otherwise void as a violation of Fort Iron’s due process rights.

And as Fort Iron explained in its December 22, 2021 correspondence, Exhibit J, and ignored by the City:

Fort Iron informed the City that, based on the language of the Order, Fort Iron had satisfied its conditions. Specifically, the Order precludes “additional storage of mill scale or similar weighted materials until a current geotechnical report signed and sealed by a licensed engineer” is received. Notwithstanding the fact that the City already has a signed and sealed report from one of the best geotechnical engineering firms in the state (the “G2 Report”) along with corresponding back-up data,² the Order clearly states a geotechnical report is only required for “additional” storage of highdensity materials. As I wrote on December 21, not only is Fort Iron complying with the Order by not bringing additional weights to its facility, since November, Fort Iron has steadily

¹² Indeed, the City’s conduct is questionable given its prior representations concerning Fort Iron. See Exhibit L. For instance, the City’s Chief Operating Officer Hakim Berry stated to journalists that Fort Iron has been “in compliance” with Detroit ordinances and operating “completely legally,” that climate change might have been a cause of the Event, and even that Fort Iron “could be a victim of the soft ground as well. Not the cause.”

¹³ Fort Iron has been systematically reducing its quantity of high-density materials and has repeatedly stated that it will continue to do so throughout January 2022.

reduced its quantity of high-density materials at its facility by approximately 50%. Photographs taken on September 17 and December 17 are attached and reflect the reduction in materials.

Likewise, further vitiating the ECO's demand for another harassing and superfluous report, Fort Iron explained in its December 22, 2021 correspondence that the ECO's references on the Michigan Building Code have no applicability to its operations:

The only response the City has given in response to the data and information that it has received is a demand by you for a "geotechnical report." For the reasons stated above, such a request is moot. However, there are additional flaws in the request. First, the City is erroneously relying on Chapter 17 of the Michigan Building Code (the "MBC") to make its request. Section 1701.1 of the MBC states that "the provisions of this chapter shall govern the quality, workmanship and requirements for materials covered. Materials of construction and tests shall conform to the applicable standards listed in this code." In short, Chapter 17 and the MBC, generally, is a construction-related ordinance. It is inapposite to the current circumstances. Second, we have repeatedly asked for a meeting between the City and Fort Iron's engineers to discuss the scope of any investigation into Fort Iron's facility. This meeting was agreed to by the former Corporation Counsel for the City but, since his resignation, the City has ignored our requests for that meeting. As stated in our last letter, we would welcome the opportunity for a well-planned inspection of our facility by the City's outside engineers along with a cooperative effort to obtain and analyze soil borings. [Exhibit J.]

Fort Iron has not violated any City ordinances. Fort Iron complied with the ECO. The City refuses to acknowledge Fort Iron's compliance and further refuses to issue the corresponding Certificate.

Immediate emergency injunctive relief is needed before the City issues another unjustified, retaliatory, arbitrary and capricious shut down order.

LEGAL STANDARD

A plaintiff seeking a preliminary injunction must establish that: (1) it is likely to succeed on the merits; (2) it is likely to suffer irreparable harm in the absence of preliminary relief; (3) the balance of equities tips in its favor; and (4) an injunction is in the public interest. *Winter v. Natural Res. Defense Council, Inc.*, 555 U.S. 7, 20 (2008). The third and fourth factors merge when, as here, the government is a defendant. See *Nken v. Holder*, 556 U.S. 418, 435 (2009). “As long as there is some likelihood of success on the merits, these factors are to be balanced, rather than tallied.” *Hall v. Edgewood Partners Ins. Ctr., Inc.*, 878 F.3d 524, 527 (CA6 2017). But, “when a party seeks a preliminary injunction on the basis of a potential constitutional violation, ‘the likelihood of success on the merits often will be the determinative factor.’” *Liberty Coins, LLC v. Goodman*, 748 F.3d 682, 689 (CA6 2014). See also *Jones v. Caruso*, 569 F.3d 258, 266 (CA6 2009).

ARGUMENT

I. Fort Iron has a strong likelihood of succeeding on the merits of its claim for declaratory relief.

Fort Iron seeks a declaration that its current operations pose no “imminent danger” or “emergency” as defined under §§8-15-5 and 8-15-6 of the Detroit City Code. Verified Compl., ECF 1, PageID.23–28. An “emergency” under Section 8-15-5 is a specific defined term: “*Emergency* means any condition in a building, premises, or structure that reasonably constitutes a threat to the public interest, safety, or welfare.” See Section 8-16-5.

The ECO, which was issued without an inspection, does not identify any “condition” in Fort Iron’s premises that constitute a “threat to the public interest, safety, or welfare.” Likewise, no “imminent danger” exists under the Code’s defined term: “*Imminent danger* means a condition which could cause serious or life threatening injury, or death, to persons at any time due to the maintenance, or lack of maintenance, of a building, premises, or structure.” See Section 8-15-6.

It cannot be reiterated enough that Fort Iron has not violated any City ordinance. The City’s ECO fails because it does not contain any accusation whatsoever that Fort Iron failed to maintain its premises or any of its structures or buildings.

The City has furnished nothing to show that Fort Iron’s current and legal operations pose any imminent danger or emergency, violate any ordinance, or violate its operating license. To the contrary, Fort Iron has submitted unrebutted engineering reports from G2 Consulting and Spalding DeDecker showing that its current reduced storage operation poses no safety hazard. Moreover, to the extent any “emergency” condition existed, it would have been on September 13, two days after the event when the unilaterally shut down Fort Iron’s operations. Two days thereafter, the City reopened Fort Iron’s operations based exclusively on Fort Iron’s delivery of the Spalding DeDecker Report. In the three months since, not only has Fort Iron operated without incident, it has: (1) delivered the G2 Report, delivered the supporting data for the G2 Report, (2) delivered a vibration study by a third engineering firm (TEC), (3) it has reduced the stockpiled materials in Area 1 to the “safe” level determined by the City’s experts, (4) engaged in daily ground movement monitoring and shared that information with the City, and (5) it has not only

committed to not bring “additional” high density materials to its facility, it has (without any prior demand from the City) significantly reduced its quantities of on-site high density materials and has committed in writing to reduce those quantities even further..

For its part, the City relies only on a December 13 engineering report that the City cannot deny has **nothing to do with Fort Iron’s current operations.**

In connection with issuing the ECO, the City violated Fort Iron’s due process “inspection” rights as provided under §8-15-34. Specifically, §8-15-34(b)(1) required the City’s inspector to provide Fort Iron with notice of a pre-compliance review of the inspection by a neutral hearing officer at the Detroit Department of Appeals and Hearings to determine the purpose, scope, and propriety of the inspection. The City never complied with this duty before it unleashed its retaliatory sham inspection – the City’s request for an inspection was politely denied and its agent simply handed over the ECO which falsely claimed that an inspection had occurred. The ECO should, therefore, be declared void as having been issued without procedural due process.

The City may try to invoke the emergency exception under §8-15-34(d), but again, as explained above, the exception does not apply in this case because no reasonable or objective emergency exists. The City can bypass the mandatory pre-inspection procedures only when a situation “requires immediate inspection in a building, premises, or structure where such condition ***reasonably constitutes an imminent threat*** to the public interest, safety, welfare, or otherwise involves exigent circumstances.” Detroit, Mich., City Code §8-15-34(d). In the absence of rebuttal evidence in hand at the time of the “inspection,” the Spalding DeDecker and G2

Consulting reports remain unrebutted. And any reliance on the Somat Report, which, by its own terms, is a report as to the event and has no data regarding Fort Iron’s current operations, is demonstrative of the pretextual and retaliatory nature of all the City’s actions with respect to Fort Iron. The sham inspection on December 16 constituted retaliation and harassment. See *MS Rentals, LLC v. City of Detroit*, 362 F. Supp. 3d 404, 416 (ED Mich. 2019) (“without the opportunity for precompliance review, there exists an “intolerable risk” that searches authorized by an ordinance will exceed statutory limits or be used as pretext to harass individuals”).

As noted above, Fort Iron will seek leave to file a supplemental pleading under Rule 15(d), as well as expand the scope of its Count 1 to account for the events that occurred after the filing of its December 9, 2021 complaint, including, of course, the retaliatory issuance of the ECO based on the sham inspection.

As noted in Fort Iron’s December 22, 2021 correspondence, the Michigan Building Code has no applicability to Fort Iron’s current operations and it has not violated any City of Detroit Ordinance whatsoever. The ECO should never have been issued. The City has not – and cannot – identify any imminent danger or emergency. To the extent the ECO has any validity, its stated condition (no additional quantities of high-density materials) has been unquestionably satisfied.

For these reasons, Fort Iron maintains that it has a high likelihood of success on the merits.

II. Fort Iron will suffer irreparable harm absent a preliminary injunction.

The moving party must show irreparable injury in order to obtain a preliminary injunction. *Sampson v. Murray*, 415 U.S. 61, 88 (1974). “A plaintiff

suffers irreparable injury when the court would be unable to grant an effective monetary remedy after a full trial because such damages would be inadequate or difficult to ascertain.” *Awad v. Ziriaux*, 670 F.3d 1111, 1131 (CA 10 2012); *Dascola v. City of Ann Arbor*, 22 F. Supp.3d 736, 746 (E.D. Mich., 2014)(injunction warranted when “remedies available at law, such as monetary damages, are inadequate to compensate for that injury.”

Fort Iron seeks emergency relief because the City, through the ECO, has threatened to indefinitely shut down Fort Iron’s entire operation and use of its property if it does not comply with terms it has already complied with. The irreparable harm Fort Iron would endure absent injunctive relief would be very similar to the irreparable harm this Court sees in the context of an automotive supply dispute. Another irreparably ruinous shut down has irreversible consequences for Fort Iron and its customer base, considering the following:

- Trucking is in high demand nationwide and shuttering Fort Iron would cause it to lose trucking runs to its competitors;
- Being designated an essential industry in scrap metal recycling, a shutdown would cause an irreversible ripple effect of shutdowns at various industrial manufacturing plants in the Detroit metro area, as Fort Iron could not collect their scrap metal and bring it to its yard;
- A shutdown would subject Fort Iron to contractual obligations it could not meet, would irreparably damage its reputation and goodwill, and Fort Iron would lose its business to other competitors able to service the various industrial facilities;

- Fort Iron's fleet of rail cars, loaded and unloaded, would be forced into storage and would thereby incur massive costs;
- In addition to disrupting the servicing of industrial plants and their ability to operate, another shut down would interfere with Fort Iron's steel mill customers' ability to remelt the scrap metal delivered to produce new steel;
- Being the second largest scrap metal processing site in the Detroit metro area, Fort Iron's inability to perform on contracts it has with steel mills would cause disruptions with their ability to melt and produce new steel;
- Scrap metal left out in the elements for an extended period will degrade and oxidize;
- The oxidation is problematic for steel producers; many of Fort Iron's steel mill customers have quality specifications that need to be met for scrap metal to be approved;
- A shutdown interrupts shipping, especially in winter, and causes a higher likelihood of rejection at steel mills for too high a percentage of oxidation.
- Based on the monthly changes in scrap metal prices, which have been volatile in the past two years, a shutdown would subject Fort Iron to obligations that would be impossible for it to cover.
- A shutdown would result in revenue losses of hundreds of thousands of dollars per day and, within days, would destroy Fort Iron as a going concern and impact over 30 employees and their families.

III. The public interest favors the entry of a preliminary injunction and the equities otherwise weigh in Fort Iron's favor.

“[I]t is always in the public interest to prevent violation of a party's constitutional rights.” *Déjà Vu of Nashville, Inc. v. Metropolitan Govt. of Nashville*

& Davidson Cty., Tenn., 274 F.3d 377, 400 (CA6 2001). See also *Pursuing Am.'s Greatness v. F.E.C.*, 831 F.3d 500, 511 (CADC 2016). After all, “the Constitution is the ultimate expression of the public interest.” *Gordon v. Holder*, 721 F.3d 638, 653 (CADC 2013) (cleaned up). Here, the public interest favors entry of a preliminary injunction because the ECO violates the constitutionally guaranteed interest Fort Iron has to procedural due process.

REQUEST FOR RELIEF

For these reasons, Fort Iron respectfully requests that the Court enter a preliminary injunction that enjoins Defendants from enforcing the ECO or otherwise shutting down Fort Iron’s use of its property pending the outcome of this case or further order of the Court.

This document consists of 5607 words, which is within the court’s limit.

Respectfully submitted,

BUTZEL LONG, P.C.

Dated: December 23, 2021

/s/ Daniel J. McCarthy

DANIEL J. MCCARTHY (P59457)

LOUIS F. RONAYNE (P81877)

201 West Big Beaver Road, Suite 1200

Troy, MI 48084

(248) 258-1616

mccarthyd@butzel.com

ronayne@butzel.com

Counsel for Fort Iron & Metal Company

KAVEH KASHEF (P64443)
Fort Iron & Metal Company
9607 Dearborn St
Detroit, MI 48209-2511
(313) 971-7023
kkashef@fortiron.com
Co-Counsel for Fort Iron & Metal Company

VERIFICATION

Kaveh Kashef, being first duly sworn, deposes and states under penalty of perjury that he has read this Motion and Brief in Support and that the matters addressed herein are true to the best of his knowledge, information, and belief, except as to the matters and/or claims which are stated to be upon information and belief, and as to those matters, he believes them to be true.



Kaveh Kashef, Esq.
Counsel and Authorized Representative, Fort
Iron & Metal Company

EXHIBIT A

BUTZEL LONG
ATTORNEYS AND COUNSELORS
a professional corporation

Kaveh Kashef
248 258 1433
kashef@butzel.com

Stoneridge West
41000 Woodward Avenue
Bloomfield Hills, Michigan 48304
T: 248 258 1616 F: 248 258 1439
butzel.com

September 14, 2021

Via Email

Mr. David Bell
Director of Buildings, Safety Engineering and Environmental Department.
Coleman A Young Municipal Center
Woodward Avenue, 4th Floor
Detroit, MI 48226
belld@detroitmi.gov

RE: Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI

Dear Mr. Bell:

We are counsel for Fort Iron & Metal Company (“Fort Iron”), which is located at the above-referenced address. Your office, City of Detroit Buildings, Safety Engineering and Environmental Department (“BSEED”), has issued an order (the “Shutdown Order”) shutting down all operations at Fort Iron’s facility located at 9607 Dearborn St., Detroit, MI. For the reasons set forth below and on behalf of Fort Iron, we respectfully request that you rescind the Shutdown Order and allow Fort Iron to continue operations under the guidelines set forth by Fort Iron’s civil engineering experts, Spalding DeDecker.

As you are aware, on September 11, 2021, an event (the “Event”) occurred which caused various forms of damage at and around the intersection of Fort Street and Dearborn Street in Detroit (the “Intersection”). Fortunately, while employees of a cannabis establishment and DTE Energy (“DTE”)¹ were present in and around a building at the Intersection, there were no injuries.

Representatives of Fort Iron have been at the Intersection since its occurrence and we have had numerous conversations with representatives of DTE as well as the City of Detroit Department of Public Works (“DPW”). Saturday evening and all day Sunday, Fort Iron offered

¹ DTE employees were called to the cannabis establishment prior to the Event because witnesses detected the presence of natural gas. We are aware of DTE’s continuous presence at the intersection for months prior to the Event and, as has been reported by various news agencies, witnesses in the neighborhood have detected natural gas during that time.

Mr. David Bell
September 14, 2021
Page 2

and granted unfettered guided access to its facility to representatives of DTE, DPW and the police department. None of Fort Iron's discussions with DTE, DPW or the police department involved any discussions regarding safety concerns associated with Fort Iron's continued operations and, in fact, Fort Iron collaborated with senior on-site officials for DTE and DPW to coordinate the orderly entry of trucks and trailers into Fort Iron's facility, given the condition of the Intersection and the fact that Fort Street had been closed at both directions. Based on these cooperative discussions, Fort Iron opened for business as usual on September 13.

Despite these discussions, on September 13, without notice, inspectors from BSEED appeared at the facility threatening to shut down Fort Iron's operations. Shortly thereafter, BSEED delivered an email (the Shutdown Order) ordering Fort Iron to "effective immediately, you are to stop all operations until further notice for the safety of the employees and people in the surrounding area at 9925, 9927, 9929, 9937 Dearborn." A few hours later, representatives from BSEED and Detroit police officers appeared at Fort Iron and ordered it to shut down all operations (including maintenance of an office staff) and immediately vacate the property. We would also note that the Shutdown Order did not identify the regulatory basis of the order, the perceived threat posed by Fort Iron's continued operations or access to the site, the duration of the shutdown nor did it provide any opportunity to be heard regarding the Shutdown Order.

Immediately prior to BSEED arriving at Fort Iron, you and I had a pleasant and productive discussion regarding the diligence Fort Iron had already conducted to ensure the safety of operations at its facility. I continued those discussions in the same tone with Ms. Jessica Parker from your office while BSEED was shutting down the facility. During those conversations, I informed you that Fort Iron engaged the civil engineering firm of Spalding DeDecker and that Spalding DeDecker has given the expert opinion that Fort Iron can continue its operations under certain recommendations. A copy of a signed and sealed version of Spalding DeDecker's written findings (the "Report") is enclosed.

As written in the Report, "in the interest of safety, Spalding DeDecker was called (by Fort Iron) to visit the site on September 12, 2021 and arrived on the site at 11:30 a.m. to complete a civil site assessment." After performing its inspection, Spalding DeDecker found: "there is no visual indication of continued movement onsite however ongoing monitoring of the situation is recommended and, as additional information is available, a response plan should be updated." Further, Spalding DeDecker offered the following recommendations:

- Follow all relevant Fort Iron SOP operations.
- Suspend all operations and within the proximity of the area of impact with a buffer of 100'.
- Retention of consultant for monitoring changes of site condition.
- The operation of the onsite railway is to be in compliance with a railway inspection, by a qualified railway consultant.
- Follow all federal, state and local regulations.

Mr. David Bell
September 14, 2021
Page 3

Fort Iron has complied with all but one² of Spalding DeDecker's recommendations, including the retention of the qualified railway consultant who found:

- Walking inspection was performed.
- No Defects found.
- No Safety Issues found.
- No Remedial Action Needed.

A copy of the track inspection report is enclosed.

The safety of our workers, the residents and the workers for the various agencies investigating the Event are of paramount importance for Fort Iron. However, Fort Iron is facing an existential threat as a result of BSEED's actions and will suffer irreparable harm if it is not permitted to continue operations under the safety recommendations set forth by Spalding DeDecker. Fort Iron is an essential business and the continuation of its operations (under the safety guidelines outline above) is essential for the continued manufacture and supply of steel in the United States. Similarly, Fort Iron has contractual obligations that it must maintain which, if unfulfilled, could cause a significant impact to steel supply chain. Equally important, over thirty individuals and their families (including families which reside rent-free in the surrounding neighborhood in company-owned housing) are entirely dependent on our continued operations.

We sincerely hope that BSEED will carefully review the reports enclosed with this correspondence and rescind its order. Along those lines, we respectfully request BSEED provide us with the various materials, assessments, data, reports, analyses and other information or documents upon which it has relied to issue the Shutdown Order. We are also concerned about the inconsistency of BSEED issuing the Shutdown Order against Fort Iron, a family owned, local small business that has no intention of engaging in any activities near the Event site, but taking no enforcement action against CSX, which has been continually running hundreds of rail cars just a few feet past the Event Site since its occurrence.

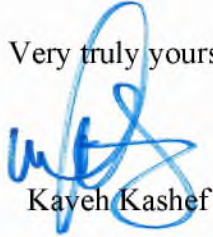
Again, based on the facts set forth above and the statements of our retained experts, we implore BSEED to rescind the Shutdown Order immediately. Moving forward, as we have been doing, we have every intention of cooperating with your office and the various agencies investigating the Event.

² Because of BSEED's Shutdown Order, Fort Iron cannot get its retained consultant on site to monitor changes of site condition. Furthermore, because of the Shutdown Order and the presence of posted notices at every gate at the facility, the facility has become an immediate target of neighborhood crime, as evidenced by the attached photographs.

Mr. David Bell
September 14, 2021
Page 4

Please contact me if you have any questions or are available to have further discussion on this matter.

Very truly yours,



Kayeh Kashef

cc (via email): Jessica Parker, Chief Enforcement Officer for Property Maintenance, BSEED
Hakim Berry, Chief Operating Officer, City of Detroit
Dayo Akinyemi, Deputy Director, Department of Public Works
Tricia Lamb DeMarco, Spalding DeDecker



September 13, 2021

Frank Denardo

Fort Iron & Metal Company
9607 Dearborn Street
Detroit, MI 48209

Re: Post-Incident Civil Site Assessment - SDA No. DE21005

Dear Mr. Denardo:

It is our understanding that on the evening of Sept. 11 the Fort Iron & Metal Company property, located at 9607 Dearborn Street, experienced ground movement corresponding to a gas rupture on the adjacent property. In the interest of safety, Spalding DeDecker was called to visit the site on Sept. 12, 2021 and arrived on the site at 11:30am to complete a civil site assessment.

Site Observation:

The visible area of impact extends from the north property line as indicated by fissures with a variable depth and opening size, the observed fissures were as large as 8" and 3' of depth. Due to the changes in surface elevation within the surrounding parcels, an exact heave height could not be determined through visual site assessment, however, it is estimated to be as high as 8' above the baseline elevation, as indicated by shifts in site elements such as the fence line, and may be variable within the area of visible impact. A private railway spur is present on the site but shows not visible signs of disturbance.

There is no visual indication of continued movement onsite however ongoing monitoring of the situation is recommended and, as additional information is available, a response plan should be updated.



Recommendations:

The following recommendations are suggested in response to this event:

- Follow all relevant Fort Iron SOP for operations.
- Suspend all operations and within the proximity of the area of impact with a buffer of 100'.
- Retention of consultant for monitoring changes of site condition.
- The operation of the onsite railway is to be in compliance with a railway inspection, by a qualified railway consultant.
- Follow all federal, state, and local regulations.

Sincerely,

Spalding DeDecker Associates, Inc.

A handwritten signature in dark ink that reads "Patricia L. DeMarco".

Tricia DeMarco, PE, AICP, LEED AP

Detroit Market Lead



Alfonsi Railroad Construction Company

Private Industry track inspection report

Location: Detroit

Date of Inspection: September 13, 2021

Industry Name: Fort Iron & Metal

Address: 9607 Dearborn

Detroit, Michigan 48209

Industry Representative: Tom Emery

Manager Operations

temery@fortiron.com

Office: 313 357 3678

Mobile: 313 658 0335

Walking Inspection was performed.

No Defects found.

No Safety Issues found.

No Remedial Action Needed

Are close clearance signs required?

Yes

No x

Are they up?

Yes

No NA

Is brush contacting the sides of cars and/or engines?

Yes

No x

Is the walkway clear of slipping/tripping hazards?

Yes x

No

I agree to make corrections to above noted items. Tom Emery

Signature of Industry Representative

Signature of Inspector: *Rodney Lippin*

Reviewed By: *Gary Alfonsi*

11. HUMAN ACTIVITY - DISPATCHED/NOTIFIED

1/1 (Clip 1)



Office NE

EXHIBIT B

From: [David Bell](#)
To: [Kashef, Kaveh](#); [Gillis, Michelle](#)
Cc: [Lawrence Garcia](#); [Jessica Parker](#); [Raymond Scott](#); [Dilip Patel](#); [Hakim Berry](#)
Subject: Re: [EXTERNAL]RE: [EXTERNAL]RE: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence
Date: Wednesday, September 15, 2021 7:03:53 PM
Attachments: [image006.png](#)
[image008.png](#)
[image009.png](#)

Kaveh

This is the all clear to begin operations and remove the mill scale from the pile at the corner of Dearborn and Fort via the joint effort we discussed tonight.

Sent from my Verizon, Samsung Galaxy smartphone
Get [Outlook for Android](#)

From: Kashef, Kaveh <kashef@butzel.com>
Sent: Wednesday, September 15, 2021, 5:12 PM
To: David Bell; Gillis, Michelle
Cc: Lawrence Garcia; Jessica Parker; Raymond Scott; Dilip Patel; Hakim Berry
Subject: [EXTERNAL]RE: [EXTERNAL]RE: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence

Thank you, David.

Is this an official all clear on the shutdown notice from the City? We can resume operations?

Thank you.

Kaveh Kashef

Equity Shareholder

kashef@butzel.com

Direct: 248.258.1433

Mobile: 313.971.7023



Stoneridge West

41000 Woodward Ave.

Bloomfield Hills, MI 48304

Office: 248.258.1616 | Fax: 248.258.1439

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From: David Bell <belld@detroitmi.gov>
Sent: Wednesday, September 15, 2021 5:09 PM

To: Gillis, Michelle <gillis@butzel.com>; Kashef, Kaveh <kashef@butzel.com>

Cc: Lawrence Garcia <garcial@detroitmi.gov>; Jessica Parker <JParker@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Dilip Patel <pateld@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>

Subject: Fw: [EXTERNAL]RE: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence

Importance: High

FYI

Regards,
Dave Bell,

Director-Building Official

Buildings Safety Engineering and Environmental Department

2 Woodward Ave.,

Suite 401

Detroit, Michigan 48226

1313.224.3252 office

belld@detroitmi.gov



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From: Abdul Abbas <abbasa@detroitmi.gov>

Sent: Wednesday, September 15, 2021 4:20 PM

To: David Bell <belld@detroitmi.gov>

Cc: James Foster <fosterja@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Jessica Parker <JParker@detroitmi.gov>; Charles Reed <reedc@detroitmi.gov>

Subject: Re: [EXTERNAL]RE: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI

- Correspondence

It is my opinion that the city's closure of the site following "the Event" on September 11, 2021, was prudent to ensure the safety of the workers. However, since the site was inspected by Spalding De Decker professional engineer, it is my opinion that Fort Iron can reasonably resume operations with strict adherence to the Spalding DE Decker PE's recommendations and the Fort Iron's SOP operation guidelines including the way using of the facility as provided by the aerial photos.

Regards,

Abdul Abbas, PE

Plan Review/ Structures

BSEED/City of Detroit

From: Gillis, Michelle <gillis@butzel.com> on behalf of Kashef, Kaveh <kashef@butzel.com>
Sent: Wednesday, September 15, 2021 12:01 PM
To: David Bell <belld@detroitmi.gov>
Cc: James Foster <fosteria@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Jessica Parker <JParker@detroitmi.gov>; Arthur Edge <edgea@detroitmi.gov>; Abdul Abbas <abbasa@detroitmi.gov>; Charles Reed <reedc@detroitmi.gov>; Kashef, Kaveh <kashef@butzel.com>
Subject: [EXTERNAL]RE: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence

Good afternoon,

Attached please find correspondence in regard to the above referenced matter.

Thank you,

Michelle L. Gillis

From: Charles Reed <reedc@detroitmi.gov>
Sent: Tuesday, September 14, 2021 5:34 PM
To: Gillis, Michelle <gillis@butzel.com>
Cc: James Foster <fosteria@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Jessica Parker <JParker@detroitmi.gov>; Arthur Edge <edgea@detroitmi.gov>; David Bell <belld@detroitmi.gov>; Abdul Abbas <abbasa@detroitmi.gov>
Subject: Re: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence

Greetings Michelle Gillis,

Below you will find a response from BSEED Structural Engineer Abdul Abbas to the report prepared by Spalding DeDecker. In an effort resolve any issues could we be provided with any site analysis data that resulted from the civil site assessment conducted by Spalding DeDecker. Also, provided copies of all Fort Iron SOP operations that would be germane to Spalding DeDecker recommendations. Please contact me should you have any further questions regarding this request.

" I can vouch for the necessity of following the process of bringing in the professional engineer to assess the safety of the site given the inspectors initial report that the "Event" rendered the site unsafe. Furthermore, Fort Iron should adhere to the recommendations of the professional engineer for the safety of all workers who may be impacted by the "Event."

However, I cannot vouch for the recommendations in the professional engineer's report because I do not have the necessary documents to review that would include the site analysis data and the SOP for Fort Iron. "

Best Regards,

Charles Oscar Reed V

Supervisor Of Plan Review

[Getting To The Finish Line In Plan Review](#)

Buildings, Safety Engineering& Environmental Department

Plan Review Division

Coleman A. Young Municipal Center

2 Woodward Avenue, Suite 409

Detroit, Michigan 48226

Phone: (313) 224 - 0297

Email: reedc@detroitmi.gov

Michael Duggan, Mayor

From: Abdul Abbas <abbasa@detroitmi.gov>

Sent: Tuesday, September 14, 2021 4:38 PM

To: David Bell <belld@detroitmi.gov>; Charles Reed <reedc@detroitmi.gov>

Cc: James Foster <fosterja@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Jessica Parker <JParker@detroitmi.gov>; Arthur Edge <edgea@detroitmi.gov>

Subject: Re: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence

I can vouch for the necessity of following the process of bringing in the professional engineer to assess the safety of the site given the inspectors initial report that the "Event" rendered the site unsafe. Furthermore, Fort Iron should adhere to the recommendations of the professional engineer for the safety of all workers who may be impacted by the "Event."

However, I cannot vouch for the recommendations in the professional engineer's report because I do not have the necessary documents to review that would include the site analysis data and the SOP for Fort Iron.

Regards,

Abdul Abbas, PE

Plan Review/Structure

BSEED/City of Detroit

abbasa@detroitmi.gov

From: David Bell <belld@detroitmi.gov>
Sent: Tuesday, September 14, 2021 3:34 PM
To: Charles Reed <reedc@detroitmi.gov>; Abdul Abbas <abbasa@detroitmi.gov>
Cc: James Foster <fosterja@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Jessica Parker <JParker@detroitmi.gov>; Arthur Edge <edgea@detroitmi.gov>
Subject: FW: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence

Please advise by COB today.

From: Gillis, Michelle [<mailto:gillis@butzel.com>]
Sent: Tuesday, September 14, 2021 10:34 AM
To: David Bell <belld@detroitmi.gov>
Cc: Kashef, Kaveh <kashef@butzel.com>; Jessica Parker <JParker@detroitmi.gov>; tdemarco@sda-eng.com; Oladayo Akinyemi <Akinyemi@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>
Subject: [EXTERNAL]Fort Iron & Metal Company – 9607 Dearborn St., Detroit, MI - Correspondence

Good morning, Mr. Bell,

Attached please find correspondence in regard to the above referenced matter.

Thank you,

Michelle L. Gillis

Legal Assistant to Joseph E. Richotte, Kaveh Kashef,
T.R. Eppel, Daniel McCarthy and T. Gordon Scupholm II
Direct: 248.593.2094
gillis@butzel.com



Stoneridge West Bldg.
41000 Woodward Ave.
Bloomfield Hills, MI 48304

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EXHIBIT C

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Sam

1

<KrassensteinS@detroitmi.gov>

Subject: Request for Geotechnical Evaluation - Fort Iron & Metal property (9607 Dearborn St, Detroit, MI 48209)

Kaveh,

The City of Detroit Buildings, Safety Engineering and Environmental Department (BSEED) is requesting that the property owner/ operator (O/O) retain a qualified/ licensed professional engineering firm in Michigan to expeditiously conduct a detailed geotechnical soils evaluation of the subject scrap yard/ metal recycling facility. Upon completion of this evaluation, the property O/O is required to submit a technically complete geotechnical evaluation report for review/ approval by BSEED. It is BSEED's intention to have the geotechnical evaluation report submitted in support of the property O/O's current and future property permit applications or certificate of compliance, as appropriate. The report must reflect current site conditions with respect to the ongoing property use(s) or intended property use(s). To that end, the following is a general list of the anticipated report contents:

- Property information/ background
- Lateral & vertical soil stability plan
- Geologic hazards (erosion/ surface runoff, site drainage, subsurface utilities, flooding, soil slope stability, ground-shaking, settlement, etc.)
- Description/ location of all existing infrastructures, such as buildings, internal access roads, utilities, surface pavement, property fencing, retaining walls, sheet piles, etc.
- Description/ location of bulk solids storage including type of materials stored/ managed, size/ height of bulk solid stockpiles, setbacks, etc.
- Supporting analysis/ geotechnical data including detailed geologic cross-sections & maps
- Known or verified environmental conditions
- Conclusions and recommendations for further investigative activities or corrective actions, if necessary
- Statements from the professional engineer as to the adequacy and stability of the property for the ongoing use(s) or intended use(s) and that any proposed or ongoing site operations will not adversely impact the property or adjoining properties including, but may not be limited to, rights-of-way, offsite utility assets, etc.
- Based on site conditions & ongoing property use(s) or intended property use(s), the report must also include a statement from the professional engineer on his/ her opinion on the lengthy of time the geotechnical report is considered valid (e.g., 2, 3 or 5 years) from the date the report prepared/ submitted to BSEED.

NOTE: the above list is provided as general guidance and, as such, is not intended to be an exhaustive list of all site-specific information required by the property O/O to evaluate the subject property appropriately.

Please be advised that a new detailed geotechnical evaluation report must be expeditiously prepared and submitted to BSEED in the event the property development/ use has changed, a significant design change is anticipated, or new property-related information becomes available.

Please let us know if you have any questions or comments.

Thank you,
Hosam

Hosam N. Hassanien, PG, CPG
City of Detroit

Buildings, Safety Engineering and Environmental Department

Direct: (313) 471-5110

Cell: (313) 949-7454

Email: hassanienh@detroitmi.gov

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EXHIBIT D



November 17, 2021

Mr. Kaveh Kashef
Fort Iron & Metal Company
9607 Dearborn St
Detroit, Michigan 48209

Re: Current Stockpiling Operations Evaluations
Fort Iron & Metal Company
9607 Dearborn Street
Detroit, Michigan
G2 Project No. 213688

Dear Mr. Kashef:

We have completed our preliminary evaluation of the current stockpiling operations at the above referred project site. We performed geotechnical investigations, reviewed instrumentation data, review geotechnical data performed by others, as well as other information provided by you. Finally, we performed calculations and analyses using the data mentioned. Based on our review and analyses, it is our opinion that the current operations have a stability factor of safety greater than 1.3. As such, it is our opinion that these operations are acceptable.

We have divided the subject project site in two distinct areas. Area No. 1 is defined as the northwest corner of the project site and is bounded by Dearborn Street to the north, the property line to the west, and the railroad tracks to the south. The eastern limit is generally defined by a north/south line that is about 20 feet west of the access drive located closest to Fort Street. Area No. 2 is the remainder of the property.

It is our understanding that Area No. 1 has been cleared through the collaborative effort of Fort Iron & Metal and Great Lakes Water Authority (GLWA). It is our understanding that the current ground surface is at approximately Elevation 591.0. In addition, extensive ground surface monitoring points have been established and frequent readings have been recorded and forwarded to us. Our review indicates that since the installation of instruments, the current condition is generally static which indicates that current Fort Iron & Metal operations have not resulted in anything other than nominal ground movements. It is our opinion that the recorded movements are approximately within the accuracy of the instruments.

We have used all the above referend data coupled with our review of the stockpile removal operations in our calculations. Our analysis indicates that the current condition for Area No. 1 has a stability factor of safety of greater than 1.3. It is our opinion that this condition is acceptable.

Based on our observation and analyses along with the continued ground movement monitoring, it is our opinion that the current operations in Area No. 2 are stable, and we do not recommend any changes from current operations in this Area No. 2.

We will continue to monitor the site, evaluate instrumentation data, and perform analyses for the indefinite future to confirm its ongoing stability.

November 17, 2021
G2 Project No. 213688
Page 2



Sealing this letter indicates that the calculations were performed under the direction of the signatory. We appreciate the opportunity to be of service to you on this project and look forward to discussing the responses presented. If you have any questions regarding this letter or any other matter pertaining to the project, please call us.

Sincerely,
G2 Consulting Group, LLC

A handwritten signature in black ink that reads "Mark S. Stapleton". The signature is written in a cursive style.

Mark S. Stapleton, P.E.
Project Manager

EXHIBIT E



9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

November 18, 2021

Via Email

Mr. David Bell

Director of Buildings, Safety and Engineering and Environmental Department

Coleman A. Young Municipal Center

2 Woodward Avenue, 4th Floor

Detroit, MI 48226

Belld@detroitmi.gov

Re: 9607 Dearborn St., Detroit, MI 48209 (the "Property")

Dear Mr. Bell:

I am counsel for Fort Iron & Metal Company ("Fort Iron") and am in receipt of the October 21, 2021 email from Hosam Hassanian requesting information regarding FIM's operations at the above-referenced Property.

Based on Mr. Hassanian's email, as well as our various conversations with you, Messrs. Hassanian and Lawrence Garcia and other representatives of the City of Detroit (the "City"), we provide you with the enclosed Stockpiling Operations Evaluations from G2 Consulting Group (the "G2 Report").

As you will read, the G2 Report assesses the Property as two distinct areas. "Area No. 1" is the area that is near the corner of Fort Street and Dearborn Street. "Area 2" is the remainder of the Property. As to Area No. 1, the G2 Report states, among other things: "our analysis indicates that the current condition for Area No. 1 has a stability factor of safety of greater than 1.3. It is our opinion that this condition is acceptable." As the City's engineers requested and confirmed, Fort Iron has brought the grade in Area No. 1 to an elevation of approximately 591 and has presently halted stockpiling operations in that area. As to Area No. 2, the G2 Report states: "it is our opinion that the current operations in Area No. 2 are stable, and we do not recommend any changes from current operations in this Area No. 2."

We trust that the G2 Report will satisfy the City's request for information regarding the safety of Fort Iron's operations at the Property. The delivery of the G2 Report should not be

Mr. David Bell
November 18, 2021

considered an acknowledgement of Fort Iron's obligation to provide the report or any other information or as a waiver of Fort Iron's rights, including its constitutional rights to procedural and substantive due process. Rather, we provide this information in the ongoing spirit of cooperation we have offered the City and its representatives since the events of September 11, 2021.

Should you have any questions, do not hesitate to contact me.

Very truly yours,



Kavch Kashef

Enclosure

cc: Lawrence T. Garcia, Esq.
Sam Krassenstein
Hakim W. Berry
Akinyemi@detroitmi.gov
Mark S. Stapleton, P.E.
Spalding DeDecker
Frank C. DeNardo, Jr.



November 17, 2021

Mr. Kaveh Kashef
Fort Iron & Metal Company
9607 Dearborn St
Detroit, Michigan 48209

Re: Current Stockpiling Operations Evaluations
Fort Iron & Metal Company
9607 Dearborn Street
Detroit, Michigan
G2 Project No. 213688

Dear Mr. Kashef:

We have completed our preliminary evaluation of the current stockpiling operations at the above referred project site. We performed geotechnical investigations, reviewed instrumentation data, review geotechnical data performed by others, as well as other information provided by you. Finally, we performed calculations and analyses using the data mentioned. Based on our review and analyses, it is our opinion that the current operations have a stability factor of safety greater than 1.3. As such, it is our opinion that these operations are acceptable.

We have divided the subject project site in two distinct areas. Area No. 1 is defined as the northwest corner of the project site and is bounded by Dearborn Street to the north, the property line to the west, and the railroad tracks to the south. The eastern limit is generally defined by a north/south line that is about 20 feet west of the access drive located closest to Fort Street. Area No. 2 is the remainder of the property.

It is our understanding that Area No. 1 has been cleared through the collaborative effort of Fort Iron & Metal and Great Lakes Water Authority (GLWA). It is our understanding that the current ground surface is at approximately Elevation 591.0. In addition, extensive ground surface monitoring points have been established and frequent readings have been recorded and forwarded to us. Our review indicates that since the installation of instruments, the current condition is generally static which indicates that current Fort Iron & Metal operations have not resulted in anything other than nominal ground movements. It is our opinion that the recorded movements are approximately within the accuracy of the instruments.

We have used all the above referend data coupled with our review of the stockpile removal operations in our calculations. Our analysis indicates that the current condition for Area No. 1 has a stability factor of safety of greater than 1.3. It is our opinion that this condition is acceptable.

Based on our observation and analyses along with the continued ground movement monitoring, it is our opinion that the current operations in Area No. 2 are stable, and we do not recommend any changes from current operations in this Area No. 2.

We will continue to monitor the site, evaluate instrumentation data, and perform analyses for the indefinite future to confirm its ongoing stability.

November 17, 2021
G2 Project No. 213688
Page 2



Sealing this letter indicates that the calculations were performed under the direction of the signatory. We appreciate the opportunity to be of service to you on this project and look forward to discussing the responses presented. If you have any questions regarding this letter or any other matter pertaining to the project, please call us.

Sincerely,
G2 Consulting Group, LLC

A handwritten signature in black ink that reads "Mark S. Stapleton".

Mark S. Stapleton, P.E.
Project Manager



From: [Lawrence Garcia](#)
To: [Kaveh Kashef](#); [David Bell](#); [Samuel Krassenstein](#); [Hosam Hassanien](#)
Cc: [Mark Stapleton, PE](#); [Tricia DeMarco](#); [Oladayo Akinyemi](#); [Hakim Berry](#)
Subject: Re: [EXTERNAL]Fort/Dearborn Street
Date: Friday, November 19, 2021 11:19:36 AM

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Mr. Kashef:

Thank you for your message below and for the attachment that came with it.

Director Bell and I appreciate having the opinion from your geotechnical consulting firm. However, we still wish to have a more detailed report that addresses more of the bullet-point items listed in Mr. Hassanienh's email of October 21, 2021. Please ask Mr. Stapleton (from G2) to enhance his report to address more of the particulars mentioned in Mr. Hassanienh's communication.

Yours,
Lawrence T. Garcia
Corporation Counsel
City of Detroit
garcial@detroitmi.gov
(313) 237-3018

From: Kaveh Kashef <kkashef@fortiron.com>
Sent: Thursday, November 18, 2021 2:32 PM
To: David Bell <belld@detroitmi.gov>; Lawrence Garcia <garcial@detroitmi.gov>; Samuel Krassenstein <KrassensteinS@detroitmi.gov>; Hosam Hassanien <hassanienh@detroitmi.gov>
Cc: Mark Stapleton, PE <mstapleton@g2consultinggroup.com>; Tricia DeMarco <tdemarco@sda-eng.com>; Oladayo Akinyemi <Akinyemi@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>
Subject: [EXTERNAL]Fort/Dearborn Street

Mr. Bell,

Attached, please find a correspondence from me and its enclosure.

Let me know if you have any questions.

Thanks,
Kaveh

Kaveh Kashef
Fort Iron & Metal Company

kkashef@fortiron.com

(313) 971-7023

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12:55

5G 96%

← Sam Krassenst...    

S Dave said to put your concerns in an email to him

Ok. Any information on meeting dates and times other than Monday am?

Saturday • 8:59 AM

S Mon 830-930, 12-1. Tues: 12-1, 3-4. Wed: 12-1

S If it's not Monday, you'll have to email Dave and see if he is willing to be flexible. (My 2 cents: If it were me, I would make sure it comes across that FIM is prepared to provide information in that meeting and not just using it to ↓ time)

Sat 9:02 AM



Text message



EXHIBIT F



December 4, 2021

Via Email

Mr. David Bell

Director of Buildings, Safety and Engineering and Environmental Department

Coleman A. Young Municipal Center

2 Woodward Avenue, 4th Floor

Detroit, MI 48226

Belld@detroitmi.gov

Re: 9607 Dearborn St., Detroit, MI 48209 (the “Property”)

Dear Mr. Bell:

This correspondence relates to my ongoing communications with representatives of the City of Detroit (the “City”), including recent conversations with Sam Krassenstein during which he advised that your office, Buildings, safety and Engineering and Environmental Department (“BSEED”) is considering issuing a potential “shutdown order” with respect to the Property.

Given the background and reasons set forth below, we think any threat of a shutdown from BSEED is unnecessary and inconsistent with the ongoing spirit of goodwill and open communications between Fort Iron and the City related to the Property. It is our hope that, as I have requested on several occasions, we can schedule a mutually agreeable date and time for the City, Fort Iron and their engineers to meet and discuss what specific additional data Fort Iron and its experts can provide to satisfy the City as to the safety of Fort Iron’s operations.

THE EVENT AND FORT IRON’S EXPERT’S REPORTS AS TO THE SAFETY OF ITS OPERATIONS

On September 11, 2021, an event occurred at the corner of Fort and Dearborn Streets (the “Event”). On September 13, 2021, BSEED issued a shutdown order on the Property (the “Shutdown Order”) without any prior notice or discussion. Fort Iron provided BSEED with a certified report from its retained civil engineering firm, Spalding DeDecker (the “SDA Report”) and additional operational safety information, and BSEED rescinded the Shutdown Order on September 15. Among the various conditions of the SDA Report, SDA recommended that Fort Iron: (1) suspend all operations within the proximity of the area of impact with a buffer of 100’” and (2) retention of consultant for monitoring changes of site condition.” Fort Iron engaged two geotechnical consultants, G2 and TEC, and has monitored site conditions daily (for a long period of time, twice daily).¹ Despite

¹ We have engaged in this effort a cost of thousands of dollars per day. We can provide the data from our monitoring to the City’s engineers.



nearly three months of massive demolition and construction efforts, as reported by G2, we are aware of nothing more than nominal ground movements.² It is likely that the City's engineers have seen the same data from their monitors. In addition, Fort Iron has complied with SDA and G2's recommendations to suspend operations at the area of impact and has kept the recommended buffer.

Further, with respect to the impact area and the City's demolition and construction efforts, Fort Iron has repeatedly cooperated with the City. When the City appeared at 6 p.m. on September 15 and requested that Fort Iron employees work through the night to remove thousands of tons of materials at the impact area, Fort Iron worked until dawn to accomplish the task. When the City's engineers asked Fort Iron to bring the grade of the impact area to 591 feet (the elevation the City's engineers identified as "safe"), Fort Iron worked diligently to meet that grade within the City's requested timeframe. Fort Iron has fed City employees and has given access to its facilities. Fort Iron permitted the City's engineers to sit side-by-side with its engineers as they conducted soil borings and Fort Iron has granted every request by the City to have access to the Property. Recently, in response to the City's request for assistance regarding its effort to lower the grade of the sidewalk on Dearborn Street, Fort Iron again pledged its cooperation in this regard.

At the same time, since rescission of the Shutdown Order, representatives of the City have worked hard to ensure that Fort Iron's operations have not been disrupted by the demolition and construction work the City and the various contractors have been performing. This mutual communication and cooperation have bred goodwill between the City and Fort Iron.

Consistent with that spirit of goodwill and communication, at my request, representatives from the City and Fort Iron met on October 13 to discuss certain concerns Fort Iron had. At that meeting, the parties engaged in an open and cooperative dialogue, and, for the first time, you indicated that BSEED wanted a report from a geotechnical expert that opined that Fort Iron's operations at the Property were safe. Fort Iron indicated that it would continue to cooperate with the City in its efforts to ensure the safety of the Property and surrounding neighborhood.

On October 21, we received an email from BSEED which identified a list of bullet-point items which exceeded the scope of the report that we had discussed on October 13. To seek clarification, I immediately reached out to corporation counsel for the City, Lawrence Garcia (who also attended the October 13 meeting) to discuss the scope of BSEED's request. Mr. Garcia and I had a cooperative, open and productive conversation. Based on our October 13 meeting and my conversation with Mr. Garcia, we provided BSEED with G2's November 17, 2021 report (the "G2 Report"). The G2 report states that the Property is safe for Fort Iron's current operations.

² According to Fort Iron's geotechnical expert, G2 Consulting ("G2"), the "recorded movements are approximately within the accuracy of the instruments."



9607 Dearborn
 Detroit, Michigan 48209
 Phone: 313-357-FORT
 Fax: 313-841-8913

THE CITY AND FORT IRON'S DISCUSSIONS TO PROVIDE THE CITY WITH ADDITIONAL DATA

After delivery of the G2 Report, Mr. Garcia sent me an email in which he indicated that you and he “appreciate having the opinion from your geotechnical consulting firm,” but that you wished to have “a more detailed report.” Later that day, we had another conversation in which I advised Mr. Garcia that, notwithstanding the City and Fort Iron’s legal positions, Fort Iron fully intended to work with the City to get on the same page as to the specific additional information the City needed beyond the G2 Report. He and I spoke again on November 24, and I again conveyed Fort Iron’s intent “to work cooperatively and amicably with the City to reach a resolution of this issue” and I suggested “a meeting with [Mr. Garcia] and representatives of BSEED ... to discuss the specifics of what the City is requesting and the bases for the requests.”³

This Wednesday, Mr. Garcia agreed to schedule an in-person meeting “to review the geotechnical report.” I responded yesterday to clarify that the G2 Report is the only “report” we currently have but I agreed to Mr. Garcia’s request for “a meeting with the engineers.” To date, all the conversations between me and Mr. Garcia have been professional, pleasant, and with the mutual goal of understanding what exact data (neither Mr. Garcia nor I are engineers) resolving any questions regarding the safety of our operations. Moreover, at no time has either party issued threats or arbitrarily set deadlines for a meeting. As recently as Mr. Garcia’s December 3 email, Mr. Garcia requested to “set up a time,” which we fully intended to do. There was no indication of an emergency or urgency. For the first time, yesterday (Friday at 5 p.m. while I was driving to Indianapolis with my family for a weekend swim meet), I was informed that a meeting among engineers had to happen “immediately.”

THE “BULLET POINTS” IN THE OCTOBER 21 BSEED EMAIL

As I believe my one-on-one conversations with Mr. Garcia and Mr. Krassenstein have revealed, Fort Iron has a good faith basis for its requests for a meeting to clarify the “bullet points” in BSEED’s October 21 email. From our perspective, some of the bullet points are vague and confusing, but we believe a cooperative dialogue will likely resolve the confusion and address both the City and Fort Iron’s concerns. For context, I will briefly address each bullet point.

BSEED requests “property information/background.” We are confused as to what this request seeks, as BSEED is aware of the Property through its numerous inspections over the years. If there is specific property information or background that BSEED does not have, we can provide it.

BSEED requests a “lateral & vertical soil stability plan.” We intend to implement a lateral and vertical soil stability plan (with G2’s assistance) in advance of recommencing operations in the

³ Coincidentally, Mr. Garcia conveyed the same idea of having a meeting between the engineers.



impact area. At this time, our only intention near the impact area is to continue to remove materials, which efforts will be guided and overseen by representatives of G2.

BSEED requests information regarding “geological hazards” (and lists several examples). This is a broad request that we can try to address with BSEED if we were able to understand what, specifically, it is asking for. As it stands, we are unaware of any geological hazards at the Property.

BSEED requests the “description/location of all existing infrastructures.” Again, BSEED is aware of this information through its regular inspections. In addition, this information can be gleaned through a Google Earth satellite view of FIM’s operations. If there is information that cannot be publicly obtained, we are happy to provide whatever additional information BSEED requests.

BSEED requests “supporting analysis/geotechnical data”. This is an area where a meeting between the engineers would be most useful so that the engineers can discuss what specific data the City needs.

BSEED requests “known or verified environmental conditions.” We do not understand the relevance of this request as Fort Iron does not bring environmental contaminants onto the Property. Nevertheless, if the City wants information about the types of materials, generally, that are brought to the site (which BSEED already knows from its numerous inspections), or environmental data about the materials we bring on site, we can provide that information.

BSEED requests “conclusions and recommendations for further investigative activities.” As is written in the G2 report, Fort Iron continues to monitor its operations and is not engaging in any operations (other than mill scale removal) at the impact area. As noted above, when Fort Iron decides to begin stockpiling operations back in the affected area, it will do so under the guidance of a stability plan prepared by its geotechnical advisors.

BSEED requests “statements from the professional engineer as to the adequacy and stability of the property.” The G2 Report addresses this request.

Last, BSEED requests a “statement from the professional engineer ... on the length of time the geotechnical report is considered valid.” The G2 Report addresses this by indicating that its report is valid if Fort Iron does not engage in stockpiling operations in the affected area and does not change the nature of its current operations.



9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

CONCLUSIONS

The safety of the Property and the surrounding neighborhood has been Fort Iron's priority since the Event. The background set forth above demonstrates, first, that there is no "emergency" second, we have cooperated with the City and its representatives and, third, we have every intention of continuing to cooperate.

The City has requested additional information beyond the SDA Report and the G2 Report and Fort Iron has stated on several occasions that **it is prepared to provide additional information**, but that a meeting between the parties' engineers is the best way for the parties to efficiently determine what, exactly, is needed. The City's corporation counsel has agreed with this approach. While I am not an engineer, hopefully, my brief response to the bullet points shows both the basis for our requests for a meeting and Fort Iron's desire to provide additional data and support for G2's conclusions.

We are informed that the City and its engineers are available for a meeting **this Wednesday, from 12-1 p.m.** That works for Fort Iron and me, Frank DeNardo and Mark Stapleton from G2 will be participating.

Should you have any questions, do not hesitate to contact me at any time.

Very truly yours,

Kaveh Kashef

cc: Lawrence T. Garcia, Esq.
Victor Moncivais, Esq.
Sam Krassenstein
Hakim W. Berry
Akinyemi@detroitmi.gov
Mark S. Stapleton, P.E.
Spalding DeDecker
Frank C. DeNardo, Jr.

EXHIBIT G

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

From: Kaveh Kashef
Sent: Monday, December 6, 2021 8:07 AM
To: Lawrence Garcia <garcial@detroitmi.gov>
Subject: FW: [EXTERNAL]RE: [EXTERNAL]Fort/Dearborn Street

Lawrence,

Following up on our call and messages yesterday, can you please confirm our time for a group call this afternoon?

At the City's insistence for a "Monday meeting", the Fort Iron team has cancelled meetings in order to meet the City's request. We look forward to the opportunity to have the engineers discuss the specific categories of information that we will provide.

Kaveh

Kaveh Kashef
Fort Iron & Metal Company
kkashef@fortiron.com
(313) 971-7023

From: Kaveh Kashef
Sent: Saturday, December 4, 2021 10:43 AM
To: Lawrence Garcia <garcial@detroitmi.gov>
Cc: David Bell <belld@detroitmi.gov>; Samuel Krassenstein <KrassensteinS@detroitmi.gov>; Hosam Hassanien <hassanienh@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>; Oladayo Akinyemi <Akinyemi@detroitmi.gov>; Robert Watson <watsonrob@detroitmi.gov>; Victor Moncivais <moncv@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Brandon Davis <Brandon.Davis@detroitmi.gov>
Subject: RE: [EXTERNAL]RE: [EXTERNAL]Fort/Dearborn Street

All,

Attached, please correspondence from me. We look forward to having a meeting with representatives from the City to discuss the specific additional data the City requires to be satisfied regarding the safety of Fort Iron's current operations. All of you have my cell number, so please contact me directly if you have any questions, concerns or if you would like to discuss this matter further.

Thank you and have a great weekend.

Kaveh

Kaveh Kashef
Fort Iron & Metal Company
kkashef@fortiron.com
(313) 971-7023

From: Lawrence Garcia <garcial@detroitmi.gov>
Sent: Wednesday, December 1, 2021 2:43 PM
To: Kaveh Kashef <kkashef@fortiron.com>
Cc: David Bell <belld@detroitmi.gov>; Samuel Krassenstein <KrassensteinS@detroitmi.gov>; Hosam Hassanien <hassanienh@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>; Oladayo Akinyemi <Akinyemi@detroitmi.gov>; Robert Watson <watsonrob@detroitmi.gov>; Victor Moncivais <moncv@detroitmi.gov>; Raymond Scott <scottr@detroitmi.gov>; Brandon Davis <Brandon.Davis@detroitmi.gov>
Subject: Re: [EXTERNAL]RE: [EXTERNAL]Fort/Dearborn Street

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Kaveh:

Would you please correspond with me and/or Victor Moncivais to set up a time for some BSEED folks to visit FIM to review the geotechnical report that you have? (i.e. just to look at it on site).

My hope is that even if you never send BSEED a copy of the report, you might let them review it to learn what they can from the work that has already been done. This should protect you against supplying work product that could be turned against you.

Thanks,

Lawrence T. Garcia
Corporation Counsel
City of Detroit
garcial@detroitmi.gov
(313) 237-3018

From: Kaveh Kashef <kkashef@fortiron.com>
Sent: Wednesday, November 24, 2021 11:16 AM
To: Lawrence Garcia <garcial@detroitmi.gov>
Cc: David Bell <belld@detroitmi.gov>; Samuel Krassenstein <KrassensteinS@detroitmi.gov>; Hosam Hassanien

<hassanienh@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>; Oladayo Akinyemi <Akinyemi@detroitmi.gov>; Robert Watson <watsonrob@detroitmi.gov>

Subject: [EXTERNAL]RE: [EXTERNAL]Fort/Dearborn Street

Lawrence,

Thank you for your email and our conversation this morning.

First, I would like to make sure that Fort Iron's "position", as referenced in the last paragraph of your email is clear. As I stated on our call and wrote in my prior email, notwithstanding our and the City's legal positions, our "position" is that we would like to work cooperatively and amicably with the City to reach a resolution of this issue.

Second, we think it would be useful to have a meeting with you and representatives of BSEED (including the internal and external engineers who have knowledge of the data on which BSEED's requests are based) to discuss the specifics of what the City is requesting and the bases for the requests. We will bring our geotechnical engineer to the meeting. Mr. Hassanian's email is rather overbroad and your email provides only a vague indication of what will actually satisfy the City's request (moreover, many of the items requested may be easily answered if we speak together on these issues).

Importantly, our experience informs that, to date, face to face meetings between representatives of Fort Iron and the City have always resulted in a cooperative solution and we expect that the same will occur in this instance. In that spirit, we will not belabor in this email our legal positions or why we may disagree with some of the conclusions in your email. We believe that an adversarial posture between the parties in this regard would be an inefficient path to solving this issue.

Please advise as to the when the City's team is available to meet and we will do our best to accommodate your available dates. We wish you and the others on this email a happy Thanksgiving.

Kaveh

Kaveh Kashef
Fort Iron & Metal Company
kkashef@fortiron.com
(313) 971-7023

Kaveh Kashef
Fort Iron & Metal Company
kkashef@fortiron.com
(313) 971-7023

From: Lawrence Garcia <garcial@detroitmi.gov>

Sent: Monday, November 22, 2021 1:24 PM

To: Kaveh Kashef <kkashef@fortiron.com>

Cc: David Bell <belld@detroitmi.gov>; Samuel Krassenstein <KrassensteinS@detroitmi.gov>; Hosam Hassanien <hassanienh@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>; Oladayo Akinyemi <Akinyemi@detroitmi.gov>; Robert Watson <watsonrob@detroitmi.gov>

Subject: Re: [EXTERNAL]Fort/Dearborn Street

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Kaveh,

Thanks again for speaking with me about your communication to Dave Bell, dated November 18, 2021.

I understand your concern that it may be contrary to your clients' interest to share specific information with the City. However, I must insist that you provide more information as requested. Several sources of authority support my position.

First, the Michigan Building Code of 2015 requires geotechnical investigations to be conducted where demanded by a building official (like Director Dave Bell). *Id.*, see Chapter 8 generally, and sections 1803.2; 1803.3 specifically. Section 1803.5.2 provides that where the strength and/or compressibility of soil is in doubt and/or where load-bearing capacity is in question, a building official may require that a geotechnical investigation be conducted. Moreover, sections like 1703.4.1 require disclosure of "sufficient technical data" to the building official.

Second, portions of the Detroit City Code also provide for requirements of more than what you have previously given. For example, Code Section 8-15-16 gives the building official significant discretion to demand information "necessary for the strength, stability or proper operation" of any premises in the City. The law on this matter is clear. Notwithstanding your concerns, Fort Iron & Metal is required to be more forthcoming.

Please reconsider your position. You should address as many of the bullet-point items in Mr. Hassanien's email as possible. Please disclose the height of the stockpile, unit weight of the material and strength of the soil. Explain the source of the 1.3 safety factor (ask your expert to "show his work"). Finally, share the results of your soil borings. The more your client can divulge, the more likely my client will be satisfied.

Yours,

Lawrence T. Garcia
Corporation Counsel
City of Detroit
garcial@detroitmi.gov
(313) 237-3018

From: Kaveh Kashef <kkashef@fortiron.com>
Sent: Thursday, November 18, 2021 2:32 PM
To: David Bell <belld@detroitmi.gov>; Lawrence Garcia <garcial@detroitmi.gov>; Samuel Krassenstein <KrassensteinS@detroitmi.gov>; Hosam Hassanien <hassanienh@detroitmi.gov>
Cc: Mark Stapleton, PE <mstapleton@g2consultinggroup.com>; Tricia DeMarco <tdemarco@sda-eng.com>; Oladayo Akinyemi <Akinyemi@detroitmi.gov>; Hakim Berry <berryh@detroitmi.gov>
Subject: [EXTERNAL]Fort/Dearborn Street

Mr. Bell,

Attached, please find a correspondence from me and its enclosure.

Let me know if you have any questions.

Thanks,

Kaveh

Kaveh Kashef
Fort Iron & Metal Company
kkashef@fortiron.com
(313) 971-7023

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EXHIBIT H

606A



City of Detroit
Buildings, Safety Engineering and Environmental Department
Property Maintenance Division
Coleman A. Young Municipal Center
2 Woodward Avenue, 4th Floor, Suite 412, Detroit, Michigan 48226
(313) 628-2451

EMERGENCY CORRECTION ORDER

12/16/2021

Owner:

Hog Brothers Properties L.L.C.
9607 Dearborn St
Detroit, MI 48209

Record ID : ANN2004-05779
Location : 9607 DEARBORN
DETROIT, MI 48209

Legal Occupancy : SCRAP YARD
Tenant :
Sector : 5 District :
Use Group : S-2 311.3
Zoning District :

Inspection Type : Emergency Inspection

Inspection Result : FAIL

Inspector : Carl Craik

Inspection ID : 32044770

The Property Maintenance Inspected the above premises on 12/16/2021

Violations of the Detroit Property Maintenance Code and/or Official Zoning Ordinance were found to exist and corrections shall be made on or before the compliance date. 12/21/2021

As documented by the City's engineering report, it has been determined that the weight of the mill scale pile at the premises was the primary cause of significant ground movement that resulted in two major heave areas causing damage to existing buildings, pavement, and utility structures. Soil bearing capacity failure occurred due to the weight of the stockpiled mill scale material which exceeded the shear strength capacity of the underlying clay soils, resulting in the heaved areas and property damage. Due to the soil bearing capacity failure at the premises, there shall be no additional storage of mill scale or similar weighted materials until a current geotechnical report signed and sealed by a licensed engineer is submitted to this Department for review and approval.

Compliance Date: 12/21/2021

Violations**COMMERCIAL EMERGENCY****1 COMMERCIAL EMERGENCY**

Emergency Order-- Sec. 8-15-39

Call and arrange an inspection of the identified emergency violation(s) Submit to this Department a current geotechnical report for the material storage addressing the items stated below before 12/21/2021 or you will be subject to a tickets and closure for each emergency violation not verified as in compliance.

2 Sec. 8-15-16

Requirements necessary for the strength, stability or proper operation of an existing building, premises, structure, fixture, or equipment, or for the public safety, health and welfare, not specifically covered by this article, or any other applicable state law or provision of the 2019 Detroit City Code, shall be determined by the Building Official.

3 Section 1703.4.1 2015 MBC

Sufficient technical data shall be submitted to the building official to substantiate the proposed use of any product, material or assembly.

4 Section 1703.4.2 2015 MBC

Supporting data, where necessary to assist in the approval of products, materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

5 Section 1803.1 et seq. 2015 MBC

Geotechnical investigations shall be conducted in accordance with Section 1803.2 and reported in accordance with Section 1803.6. Where required by the building official or where geotechnical investigations involve in-situ testing, laboratory testing or engineering calculations, such investigations

THE REQUIRED GEOTECHNICAL REPORT FOR THE MATERIAL STORAGE SHALL ADDRESS THE FOLLOWING:

- Property information/background
- Lateral & vertical soil stability plan
- Geologic hazards (erosion/surface runoff, site drainage, subsurface utilities, flooding, soil slope stability, ground-shaking, settlement, etc.)
- Description/location of all existing infrastructures, such as buildings, internal access roads, utilities, surface pavement, property fencing, retaining walls, sheet piles, etc.
- Description/location of bulk solids storage including type of materials stored/managed, size/height of bulk solid stockpiles, setbacks, etc.
- Supporting analysis/geotechnical data including detailed geologic cross-sections & maps
- Known or verified environmental conditions
- Conclusions and recommendations for further investigative activities or corrective actions, if necessary
- Statements from the professional engineer as to the adequacy and stability of the property for the ongoing use(s) or intended use(s) and that any proposed or ongoing site operations will not adversely impact the property or adjoining properties including, but may not be limited to, rights-of-way, offsite utility assets, etc.
- Based on site conditions & ongoing property use(s) or intended property use(s), the report must also include a statement from the professional engineer on his/her opinion on the lengthy of time the geotechnical report is considered valid (e.g., 2, 3 or 5 years) from the date the report prepared/submitted to BSEED.

Telephone inquiries may be made between 8:00 am and 4:00 pm Monday - Friday.

NOTE: YOU ARE REQUIRED TO OBTAIN A CERTIFICATE OF COMPLIANCE FOR YOUR PROPERTY. UNDER CERTAIN CONDITIONS, YOU MAY BE ENTITLED TO RECEIVE A TEMPORARY CERTIFICATE OF COMPLIANCE WHILE CORRECTIONS ARE IN PROGRESS.

TO RECEIVE THE REQUIRED CERTIFICATE OF COMPLIANCE FOR INSPECTION OR MAINTENANCE OF GRANT YOU MUST PERFORM THE FOLLOWING:

- 1. CORRECT ALL OF THE DEFICIENCIES LISTED ABOVE.**
- 2. PAY THE REQUIRED INSPECTION FEES AS INVOICED.**
- 3. CALL (313) 628-2451 FOR A RE-INSPECTION AFTER CORRECTION OF DEFICIENCIES AND PAYMENTS OF THE FEES AS INVOICED**
- 4. YOU MUST REGISTER YOUR PROPERTY.**

YOUR FAILURE TO COMPLY WITH THE ABOVE WILL RESULT IN THE ISSUANCE OF ONE OR MORE TICKETS WHICH WILL BE HEARD AT THE CITY OF DETROIT, DEPARTMENT OF ADMINISTRATIVE HEARINGS, WHICH IS LOCATED AT 1004 COLEMAN A. YOUNG MUNICIPAL CENTER DETROIT, MICHIGAN 48226

EXHIBIT I

Infrastructure Engineering Solutions

8031 W. Grand Blvd. • Suite 228 • Detroit, Michigan 48202



REPORT ON GEOTECHNICAL EVALUATION

GROUND UPHEAVAL INCIDENT INTERSECTION OF FORT AND DEARBORN STREETS DETROIT, MICHIGAN

Owner:



City of Detroit

Performed under contract with:



Hubbell, Roth, and Clark, Inc.
535 Griswold St Ste 1650,
Detroit, Michigan 48226

December 13, 2021
2019086E-005



Somat Engineering,
INCORPORATED



December 13, 2021
2019086E-005

Mr. Oladayo Akinyemi, P.E.
Deputy Director, Department of Public Works
City of Detroit
City Engineering Division
2 Woodward Avenue, Suite 611
Detroit, Michigan 48226

RE: Report on Geotechnical Evaluation
Ground Upheaval Incident
Intersection Of Fort and Dearborn Streets
Detroit, Michigan


Dear Mr. Akinyemi:

We have completed the geotechnical evaluation for the ground upheaval incident at the intersection of Fort and Dearborn Streets in Detroit, Michigan. This report presents the results of our observations, and geotechnical analysis.

The soil samples collected during our field investigation will be retained in our laboratory for 1 year from the date of the final geotechnical report, at which time these samples will be discarded unless otherwise directed by you.

It was a pleasure working with you on this project. If you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,
Somat Engineering, Inc.


JD Hoksbergen, P.E.
Senior Project Engineer



Jonathan Zaremski
Dec 13 2021 2:54 PM
Jonathan D. Zaremski, P.E.
Geotechnical Services Manager

JDH/JDZ/aer

cc: Richard Doherty - City of Detroit, Department of Public Works
Kevin Surhigh - HRC

**REPORT ON GEOTECHNICAL EVALUATION
GROUND UPHEAVAL INCIDENT
INTERSECTION OF FORT AND DEARBORN STREETS
DETROIT, MICHIGAN**

EXECUTIVE SUMMARY

A general summary of the report conclusions and recommendations is provided below:

1. Unexpected and significant ground movement that resulted in two major heave areas and damage to existing buildings, pavement, and utility structures occurred at the southeast corner of the intersection Fort Street and Dearborn Street in Detroit, Michigan during the evening of Saturday, September 11, 2021.
2. Based on video footage from security cameras, the majority of the ground movement happened between about 7:00pm and 7:35pm on September 11, 2021.
3. From observations collected during our initial site visit on September 13, 2021, and our knowledge of the subsurface characteristics of this area of Detroit, we suspected that the primary cause of the ground movement was related to the presence of a nearby stockpile of metallic scrap and soft ground conditions. This report primarily addresses the geotechnical aspects of site investigation and analysis that were performed post-incident to determine the most likely cause of the ground upheaval.
4. Central to the two major heave areas is the corner of a property owned by Fort Iron and Metal. Since the mid-1980s, this corner of the parcel near Fort Street and Dearborn Street has been used for scrap storage. At the time of the incident on September 11, 2021, a large stockpile of mill scale was situated in this exact area of the parcel. The post-incident topographic survey indicated that the peak elevation of the stockpile was almost 610 feet, or about 25 feet above surrounding street grades. Based on the video camera footage, it appears that the top elevation of the stockpile was lowered during the failure event, indicating that the top of the mill scale pile was likely situated at a maximum elevation greater than 610 feet. Based on a sample of mill scale collected from the stockpile and our laboratory testing, the mill scale has a unit weight of about 230 pcf. This value is in the range of about two times the unit weight of most soils.
5. In the 100-day period before the incident, 15.8 inches of rainfall was recorded at the Detroit/Pontiac weather station. This is about 150% of the normal rainfall received during this timeframe.
6. Somat performed two soil borings between September 15 and September 18, 2021. Soil samples were collected for numerous laboratory tests, and in-situ vane shear tests were performed to determine the shear strength of the clay soils encountered in the borings. Additionally, an inclinometer was installed in one of the boreholes to measure lateral subsurface displacement in the soils.
7. The results of our field investigation and laboratory testing indicated a subsurface profile typical for this area of Detroit, including zones of very soft to soft clay soils encountered between about 20 to 55 feet below existing grades, or within elevation range 565 to 535 feet.



**REPORT ON GEOTECHNICAL EVALUATION
GROUND UPHEAVAL INCIDENT
INTERSECTION OF FORT AND DEARBORN STREETS
DETROIT, MICHIGAN**

8. Section 5 of this report provides a hypothesis and rationale for the most likely causes of the incident. We have considered several reasonable, but wide-ranging possibilities including mine subsidence, artesian groundwater, methane gas, utility rupture, seismic activity, excessive rainfall, soil shear failure, and time-dependent consolidation settlement of the clay soils underlying the site.
9. Ultimately, it is our professional engineering opinion that the weight of the stockpiled mill scale material exceeded the shear strength capacity of the underlying clay soils to cause the heaved areas and disruption to the existing structures adjacent to the Fort Iron site. Other factors such as consolidation settlement may have contributed to the incident and/or to the timing of the incident, but the primary cause of the soil failure was the load imposed by the mill scale stockpile.

The summary presented above is general in nature and should not be considered apart from the entire text of the report with all the qualifications and considerations mentioned therein. Details of our findings are discussed in the following sections and in the appendices of this report.

REPORT PREPARED BY:

JD Hoksbergen, P.E.
Senior Project Engineer

Jonathan D. Zaremski, P.E.
Geotechnical Services Manager

REPORT REVIEWED BY:

Corey R. Hostetter, P.E., LEED AP
Senior Project Engineer

Richard O. Anderson, P.E.
Principal Engineer



**REPORT ON GEOTECHNICAL EVALUATION
GROUND UPHEAVAL INCIDENT
INTERSECTION OF FORT AND DEARBORN STREETS
DETROIT, MICHIGAN**

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**REPORT ON GEOTECHNICAL EVALUATION
GROUND UPHEAVAL INCIDENT
INTERSECTION OF FORT AND DEARBORN STREETS
DETROIT, MICHIGAN**

1.0 INTRODUCTION

1.1 GENERAL

Upon authorization from the City of Detroit (City), Somat Engineering, Inc. (Somat) has completed a geotechnical evaluation of the ground upheaval incident in Southwest Detroit, near the intersection of Dearborn Street and Fort Street. This report concludes the as-needed emergency scope of work, generally outlined in our proposal dated September 15, 2021.

The following sections of this report provide our understanding of the site characteristics, ground movement, historical background, the results of the geotechnical investigations, and our hypothesis for the cause of the movement. The closing of this report attempts to explain “Why did it happen?”.

1.2 PROJECT INFORMATION

In the evening of September 11, 2021, the ground in the vicinity of the southeast corner of Dearborn Street and Fort Street began to move. The result of this movement was a large heaved area on the south side of Dearborn Street and another heaved area behind the former Stash facility, structural damage of the buildings at 10015 and 10023 W. Fort Street, and the subsidence of the stockpiled material within the west side of the Fort Iron and Metal yard on Dearborn Street. The heave of the streets, parking lot, and sidewalks, estimated to be as high as about 7 feet, resulted in several utilities being impacted and/or damaged.

1.2.1 Common Terms and Stakeholders

Throughout this report, several terms and stakeholders will be called out. For clarity, we offer this glossary of terms and names:

- Fort Iron – Fort Iron and Metal scrap recycling facility is located at 9607 Dearborn Street in Detroit
- Mill Scale – Mill scale is a type of iron oxide that is formed on the surface of the steel during the hot-rolling process, and is considered to be a scrap material. The material has value in the ferrous recycled material market and was being stockpiled by Fort Iron on their yard.



- Stash Building – Formerly the Stash Detroit Medical Marijuana Dispensary, located at 10015 W. Fort Street in Detroit, was a two-story building with a basement built in 1907.
- Rayco Building – The Rayco Plating facility, located at 10023 W. Fort Street, immediately adjacent to the south of the Stash building.
- Heaved Areas (Dearborn Heave, Stash Heave) – the results of the ground movement incident included the heaved surface of Dearborn Street and the heaved surface in the rear of the Stash building. These areas are referred to as either the Dearborn Heave or the Stash Heave
- Incident – the collective circumstances and events around September 11, 2021 that resulted in the two major heave areas and structural damage to the Stash and Rayco buildings, as well as other structures, including pavement and utilities.
- GLWA - Great Lakes Water Authority; owns and maintains a 16-inch diameter watermain in Fort Street and Dearborn Street.
- DWSD - Detroit Water and Sewerage Department; owns and maintains a 15-inch diameter storm sewer in Dearborn Street.
- DTE - DTE Energy; owns and maintains a 24-inch diameter high pressure gas line in Fort Street and Dearborn Street and a 6-inch diameter gas line in Fort Street.
- City - City of Detroit; maintains Dearborn Street
- MDOT - Michigan Department of Transportation; maintains Fort Street
- EGLE – Michigan Department of Environment, Great Lakes, and Energy
- SME – Geotechnical consultant for DTE gas operations
- Exponent - Geotechnical consultant for DTE
- FK Engineering – Geotechnical consultant for GLWA
- TEC – Testing Engineers and Consultants, geotechnical consultant for Fort Iron
- G2 – G2 Consulting, geotechnical consultant for Fort Iron
- NOAA – National Oceanic and Atmospheric Administration, referenced for rainfall data

1.3 TIMELINE OF EVENTS

The following timeline of the incident at the southeast corner of Fort Street and Dearborn Street has been compiled from historical documents, site visits, and shared project information:

- Up until the mid-1980's, there were several structures situated on the Fort Iron parcel (DTE/Wayne State Aerial Photo Library)
- Since the mid-1980s, this area of the Fort Iron parcel near the corner of Fort Street and Dearborn Street has been used for metallic scrap storage (Google Earth Images)



- Since at least 2018, the area of the parcel adjacent to the Heaved Areas has been used for the storage of Mill Scale (MDEQ inspection report and Google Earth Images). However, historic stockpile dimensions, including heights, are unknown.
- Street level photographs from November 2020 show the stockpiled height of the Mill Scale to be about 15 feet high above street grades, based on the known height of 10 feet for the existing fence. (Google Earth Images)
- Street level photographs from August 2021 show the stockpiled Mill Scale significantly larger in height, about 25 to 30 feet above street level grades.
- In late August 2021, residents and people in the area reported the smell of natural gas near this intersection and DTE was requested to investigate. (Conversations with stakeholders)
- September 10, 2021: reports of water leaking into basement of Stash building
- Events of September 11, 2021, from security video files:
 - 6:50pm, DTE vehicle on site, parked on Dearborn Sidewalk (ch08_20210911185043.mp4)
 - 6:50pm, visual of stockpile heights in excess of 25 feet (ch02_20210911185043.mp4)
 - 7:06pm; traffic on Dearborn starts showing bumps in pavement (ch08_20210911190618.mp4)
 - 7:08pm – 7:32pm, stockpile in background can be seen dropping (ch2 various files)
 - 7:17pm, movement in Rayco north wall (ch02_20210911191630.mp4)
 - 7:24pm, brick façade on south Stash wall collapses (ch02_20210911191630.mp4)
 - 7:32pm, heave in Dearborn grows rapidly (ch08_20210911193246.mp4)
 - 7:32pm, cracks in pavement can be seen widening, and rear parking lot of Stash business starts heaving (ch01_20210911193142.mp4)
 - 7:33pm, brick façade of north wall of Stash collapses (ch08_20210911193246.mp4)
 - 7:34pm, significant settling of stockpile (ch08_20210911193407.mp4)
 - 7:35pm, movement appears to have stopped in rear parking lot of Stash (ch01_20210911193527.mp4)
- The afternoon of September 13, 2021: Somat is engaged by the City during a site visit, to lead investigative effort, coordination of various design consultants, and restoration efforts, DTE completes bypass of 6-inch gas line in the evening.
- September 14, 2021: Stash building demolished, Somat commences our investigation with GPR scanning, surveying of site begins.
- September 15, 2021: DTE 24-inch-high pressure gas main shut down out of caution, Mill Scale stock pile lowered by about 5 to 10 feet in height, Somat boring Somat_B-01 started.



- September 16, 2021: day-over-day comparative survey readings indicate minimal movement, Somat boring Somat_B-01 completed with inclinometer installed, allowed to visit the Fort Iron yard and take photographs: observed fissure around edge of mill scale stock pile.
- September 17, 2021: Somat boring Somat_B-02 started
- September 18, 2021: Meeting at Fort Iron site, sample of mill scale obtained, Somat boring Somat_B-02 completed
- September 19, 2021: TEC Boring TEC_B-1 started
- September 20, 2021: EGLE notifies City of potential contamination from Rayco Building site and other area sites, TEC Boring TEC_B-1 completed
- September 21, 2021: Fort Iron resumes removal of Mill Scale from the corner of the site
- September 28, 2021: DTE consultant begins test pit and soil boring program
- September 30, 2021: DTE consultant completes test pit and soil boring program with one boring, stacked piezometers, and two test pits, excavation of Dearborn Heave starts at east end.
- October 5, 2021: excavation of Dearborn Heave completed
- October 8, 2021: repair of GLWA water main completed, removal of Stash building debris starts
- October 20, 2021, G2/TEC investigation completed
- November 2, 2021: removal of Stash building debris completed

2.0 SITE CONDITIONS

As noted above, the current use of the Fort Iron site appears to begin in the mid to late 1980s. However, this area of Detroit was historically an industrial area, with the old Carbon Works nearby and a gateway to the Ford Rouge Factory. However, the area currently carries heavy truck traffic along Fort Street and Fort Iron hauling traffic on Dearborn Street.

The main section of the Fort Iron site is generally bounded by Dearborn Street to the north, railroad tracks to the south and east, and by the Stash and Rayco parcels to the west. To the north of Dearborn Street, there is an auto repair shop, a Fort Iron dumpster storage yard, and some residential streets. In the overall area, there are many empty parcels, some other residential streets, a few commercial and industrial properties, and a cemetery. Woodmere Cemetery is located at the north quadrant of the Fort Street and Dearborn Street intersection. The intersection of Fort Street



and the Rouge River is located about 1,800 feet to the west of the intersection. An overall site proximity map is located in Figure 1.

2.1 TOPOGRAPHIC INFORMATION

Based on the topographic information obtained at the onset of this investigation, the road surface grades of Dearborn Street and Fort Street near the intersection range from 585 to 586 feet. At the time of the topographic survey, the Dearborn heave reached an elevation of about 592 feet, was about 180 feet long along Dearborn Street and about 55 feet wide. Based on visual estimates, the Stash Heave reached a similar height.

The topographic survey of the mill scale stock pile, post-incident, indicated a peak elevation of almost 610 feet, or about 25 feet above surrounding street grades and consistent with estimates from videos and photographs.

In total, about 1.1 acres (48,500 square feet) of plan area was impacted by the incident. The plan area of the incident is depicted in the aerial image shown below.



Exhibit 1 - Site Aerial Image



2.2 REGIONAL GEOLOGY

The local geology of southeastern Wayne County is predominantly a result of the glacial activity, resulting in lacustrine deposits, primarily clays and silts but some areas of sands and gravels. These deposits likely originated from the recession of the glaciers during the Wisconsin stage of glaciation.

2.2.1 Salt Mining and Solution Mining Activities

During the Paleozoic Era, beginning 600 million years ago and ending about 230 million years ago, seawater invaded the Michigan basin at least six times. As the seas receded and evaporated, rock and mineral deposits such as halite (rock salt), gypsum (calcium sulfate with water), liquid brines, petroleum, lime, clay, sandstone, and coal were left behind. Since the early decades of the 20th century, Michigan has been ranked first in the United States in the production of calcium chloride (salt). This mineral is found in the sedimentary rocks of the Michigan Basin. Salt is obtained from beds of rock salt over 1,100 feet below the surface in the Detroit area and from natural and artificial brines of dissolved salt that are pumped to the surface in Midland, Manistee, Muskegon, Wayne, and St. Clair counties. Brine is water saturated with common salt.

In the Detroit area, the salt mining consisted of conventional tunnel excavation techniques and the solution mining method. In the conventional tunnel excavation technique (or dry mining), which is the more common in Detroit area, the salt is mined directly in solid form in large underground caverns, much like one would mine coal or iron ore. Underneath the southwestern Detroit area, it is estimated that rock salt mines total over 100 tunneled miles. In the solution mining method, fresh water is injected through a pipe into deep shafts that end in the salt beds, and salty water (brine) is drawn upward and evaporated, to recrystallize the salt. Or, salty brine found in shallow wells can simply be pumped to the surface and evaporated there, to make salt.

At the Detroit salt mine (Morton Salt), which has a mine shaft near the existing M-85 Bascule bridge (southwest of Oakwood Blvd. and Fort St. intersection), active mining occurs about 1,200 feet below the surface and employs the room and pillar method to extract the salt. The salt is extracted by carving out rooms that measure 50 to 60 feet wide and about 25 feet high. At regular intervals are 60-foot by



80-foot pillars of salt that support the roofs. These galleries are generally “undercut” using machines that bite out channels at the floor and dynamite blasting operations that crumble down the walls of salt. As a result of these salt mining operations, large spans of unsupported roofs are sometimes formed, which in turn cause sagging, downward flexure, and local separation of rock units. This may result in local roof collapse and eventual surface subsidence. In addition, the dynamite blasting may cause significant vibrations which propagate through the rock and soil layers on top of the mine and eventually to structures at the ground surface. Also, salt mining near the top of the salt layers may expose overlying already weak or weakened rocks due to the dynamite blasting, which increases the risk of roof collapses.

As part of nearby geotechnical investigations, we conducted a document review of the available information regarding the effects of the salt mining operations on the rock and soil layers above the salt mine galleries and on the surface structures within the southwestern area of Detroit. Review of published documents indicates that sinkholes, ground subsidence, and damage to surface properties were reported in local news media since the 1950’s and were attributed to the salt mining operations underneath the southwestern Detroit area. According to published literature, sinkhole and ground subsidence were reported on Zug Island, the Downriver area, and Grosse Ile as a “consequence” of the salt mining operations. In addition, damage to surface structures (foundation settlement and vibrations) attributed to the salt mining operations were also reported in some areas of southwest Detroit.

The above information regarding the Salt Mining and Solution Mining Activities was adapted and compiled from different references, which are identified below:

- Salt Institute Website.
- Detroit Free Press Archives.
- Detroit News Archives.
- Detroit Sunday Times Archives.



2.3 LOCAL PRECIPITATION AND HYDROLOGY

Based on the USGS water level gauge at Fort Wayne (Monitoring location 04165710), the average elevation of the water surface in the Detroit River on September 11, 2021 was 575 feet for the day.

Based on the rainfall data collected at the NOAA Detroit/Pontiac City airport station, we reviewed daily rainfall totals for the 100 days preceding the event, starting June 1. The cumulative total for this period in 2021 was about 15.8 inches. In reviewing the cumulative total of rain over the same period of 2020, slightly more rainfall was recorded at 16.9 inches. These two years followed 2019 and 2018, which recorded much less rain over that period, at 10.3 and 11 inches respectively. For perspective, according to NOAA the average monthly rainfall in Detroit over the months June, July, and August ranges from about 3.25 to 3.5 inches per month (10 inches total over the three-month period).

Month	Cumulative Totals (inches)				
	2021	2020	2019	2018	Average
June	5.16	2.4	2.86	3.66	3.26
July	4.95	5.02	2.63	4.24	3.51
August	5.17	5.99	3.14	1.2	3.26

The rainfall data for these periods are contained in Appendix G.

As noted, the precipitation in 2021 and 2020 was higher than average. However, due to the well-drained condition of the mill scale stockpile, it is our opinion the rainfall did not appreciably increase the unit weight of the mill scale, as shown later in the results of the laboratory testing of this material.



3.0 FIELD INVESTIGATIONS AND MONITORING

Beginning on September 13, 2021, along with other emergency response personnel already being on site, several geotechnical consultants were engaged by various parties to begin investigating the incident and planning for restoration. Through these consultants, three (3) separate field investigations were performed, generally consisting of drilling of soil borings and performing test pits. In addition, several historical boring logs were provided to the consultant team by Somat and MDOT. In total, fifteen (15) soil borings, either current or historical, were available for this report. A compilation of the boring locations is included as part of a site diagram included in Figure 2.

As stated in the timeline, Somat performed GPR scanning on September 14, 2021. The scanning was performed as part of early site reconnaissance and, in general, revealed voids under the pavement that had heaved along Dearborn Street. However, due to the thickness of the pavement, groundwater in the soil, and other material in the pavement section (railroad tracks and ties), the results were inconclusive other than providing for concern to place equipment onto the top of the heaved area.

3.1 SOMAT ENGINEERING INVESTIGATION

3.1.1 Soil Borings, Sampling, and In-Situ Testing

As first on the site, Somat originally proposed a field exploration consisting of drilling a total of five soil borings, with depths varying from about 60 feet below grade to the top of bedrock (estimated to be at 85 to 90 feet below grade). Two soil borings were proposed in the heaved areas, but were not drilled due to safety concerns. At the time the drill rig and crew were on-site, the height of the mill scale stockpile had not been lowered enough to allow for the removal of debris and earthwork to level off a safe area for a working platform. A third boring was proposed within the Fort Iron & Metal property, but Somat was not permitted by the Fort Iron owner to drill the boring.

Only two soil borings were drilled. Somat_B01 and Somat_B02 were completed between September 15 and September 18, 2021. In general, each boring was performed in an area deemed safe to work, but close enough to represent each of the heaved areas. Soil boring Somat_B01 was



drilled behind the Stash building, and extended to a depth of 84.5 feet below grade (elevation 500.2 feet). Soil boring Somat_B02 was drilled in the south sidewalk of Dearborn Street, just east of the intersection with Fort Street and extended to 85 feet below grade (elevation 501.8 feet). The surveyed location information is provided in Table 1 at the end of this report.

Using an ATV mounted drill rig, the two borings were advanced using 3¼ inch inside diameter, hollow stem augers to a depth of about 10 feet, after which wash rotary techniques were used to complete the boring.

Soil samples were recovered in the soil borings using split-spoon sampling procedures in accordance with ASTM Standard D1586. The sampling intervals were atypical, but in general, the samples were obtained at 2½ -foot intervals for the first 10 to 15 feet of drilling, then on a more continuous basis through 40 to 50 feet, where a notable increase in shear strength of the lean clay soils was observed. The split-spoon samples were sealed in glass jars in the field to protect the soil and maintain the soil's natural moisture content. Shelby tube samples were obtained to supplement the split-spoon samples.

The thin-walled (3-inch diameter) Shelby tube samples were obtained in accordance with ASTM D1587. Shelby tubes are hydraulically pushed into the soil at the base of the borehole and allowed to sit in the ground for about 10 minutes, after which a ¼ turn by hand is applied to the drill rods to break the soil column at the bottom of the tube. Shelby tube samples are sealed immediately at both ends with about one inch of hot liquid wax and then sealed with plastic end-caps and duct tape. All tubes were identified with information on boring number, sample number, sample depth and recovery. The tubes were stored in a vertical position to minimize sample disturbance during transportation.

In addition to the split spoon and Shelby tube samples, field vane shear tests were performed at selected depths, where suitably soft to medium clay layers were encountered. The tests were performed using an Acker vane shear test kit with a calibrated torque head, in accordance with ASTM D2573. These tests were performed primarily to determine the in-place shear strength of



the clay soils. The test generally consists of pushing a four-bladed vane into the undisturbed soil and rotating it from the surface to determine the torsional force required to cause a cylindrical surface to be sheared by the vane. This torsional force is then converted to a unit shearing resistance of the cylindrical surface.

The vane was rotated at a rate of approximately 5 degrees per minute and torque readings were obtained at 5-degree intervals. Following determination of the maximum shear strength, the vane was rotated quickly to shear off the soil column and a remolded strength test was performed following a 5-minute waiting period. The undisturbed shear strength was compared to the remolded shear strength to determine the sensitivity of the clay. The results of these field vane shear tests are presented on the boring logs and as detailed reports in Appendix B-I.

In addition to the soil boring sampling, a 5-gallon bucket of the Mill Scale was obtained from Fort Iron. The material was sampled from the surface of several locations around the perimeter of the stockpile. The sample was transported to our laboratory for further testing.

All soil samples were transported to Somat's laboratory for further analysis and testing. Subsequently, selected samples were sent to an outside laboratory for further testing. The soil samples collected for this investigation will be retained in our laboratory for a period of 1 year from the date of the final report, after which they will be discarded unless we are notified otherwise.

Whenever possible, groundwater level observations were made during the drilling operations and are shown on the individual Logs of Test Borings. During drilling, the depth at which free water was observed, where drill cuttings became saturated or where saturated samples were collected, was indicated as the groundwater level during drilling. In granular, pervious soils, the indicated water levels are considered relatively reliable when solid or hollow-stem augers are used for drilling. However, in cohesive soils, groundwater observations are not necessarily indicative of the static water table due to the low permeability rates of the soils, and due to the sealing off of natural paths of groundwater flow during drilling operations.



It should be noted that seasonal variations and recent precipitation conditions may influence the level of the groundwater table significantly. Groundwater observation wells are generally used if precise groundwater table information is needed, however the installation of groundwater monitoring wells was not included in the scope of the investigation.

3.1.2 Gas Monitoring

During drilling of the soil borings, the atmosphere within the breathing zone was being monitored continuously throughout the drilling of the borings. Gas monitoring was performed using a four-gas detection meter. The meter simultaneously measures the Lower Explosive Limit (LEL) of combustible gases, oxygen, carbon monoxide, and hydrogen sulfide. These gases are virtually undetectable by visual and olfactory methods (hydrogen sulfide has a distinct odor, but the gas can paralyze the sense of smell).

3.1.3 Photoionization Detector Screening

Photoionization detector (PID) screening was performed in conjunction with the geotechnical investigation for the top 25 feet of both Somat borings. Each retrieved soil sample was examined for evidence of discoloration, unusual odors, or non-aqueous phase liquids. These observations (if any) were recorded on the field logs of the soil borings.

Each retrieved soil sample in the top 25 feet was field-screened for total volatile organic compounds (VOCs) using a Mini-Rae 3000® PID equipped with a 10.6 eV UV lamp. The PID is a portable vapor and gas instrument that detects a variety of organic compounds with a detection range of approximately 0.1 to 10,000 parts per million (ppm). The PID reading can indicate if VOCs are present, but does not identify which type or the specific concentration. The PID was calibrated prior to screening using a 100-ppm isobutylene standard. Each soil sample was placed in a re-sealable, plastic sample collection jar, allowing for headspace expansion as the sample was allowed to warm. Once expansion occurred the bag was opened, the tip of the PID was inserted and the result was recorded.



3.1.4 Instrumentation

At the completion of boring Somat_B1, a 3-inch diameter inclinometer casing was installed to a depth of about 57 feet below grade (approximate elevation 578 feet). This was the maximum depth to which the tip of the casing could be pushed due to the squeezing-in of the borehole excavation upon drilling completion. Because we were interested in quickly obtaining readings in the installed casing, the annular space between the excavation sides and the plastic casing was not backfilled using traditional grout methods, which require cure time. The sand was used as backfill material so inclinometer monitoring could occur immediately. The intent of installing the inclinometer was to detect on-going lateral displacement of the subsurface soil profile. Daily readings using a manual probe were obtained from September 16 through October 6, 2021. Graphical representation of the inclinometer readings is included in Appendix B-2.

3.1.5 Laboratory Testing

All soil samples were classified in accordance with the Unified Soil Classification System (USCS). Representative soil samples were subjected to laboratory tests consisting of moisture content determinations, unit weight determinations, hand penetrometer tests, Torvane tests, unconfined compressive strength tests, Atterberg Limits tests, and grain size/hydrometer analyses. Select Shelby tube samples were subjected to other geotechnical lab tests, including one-dimensional consolidation tests.

In addition to performing unit weight testing on the soil samples, unit weight determinations were also performed on the bulk sample of Mill Scale. The results of that testing are presented in Appendix C-5.

A summary table and results of the laboratory tests are presented in Appendices C. All laboratory tests were performed in accordance with their applicable ASTM procedures.

Moisture Content Determination Tests

All samples were sealed in the field to retain the natural moisture content of the soil specimen. Moisture content determination tests were performed on cohesive samples in accordance with ASTM



D2216. Results of the moisture content determination tests are included in Appendix A-1 on the respective logs of test borings. The moisture content of the Mill Scale was determined by allowing the sample to air dry over several days.

Unconfined Compressive Strength Tests

Standard test methods for unconfined compressive strength of cohesive soil were performed in accordance with ASTM D2166 on selected cohesive samples from the soil borings. The unconfined compression test consists of axially loading a small cylindrical soil sample at a slow rate of strain, until failure occurs. Failure is defined as the maximum stress level in the soil sample or the stress level at 15 percent strain, whichever is less. The results of these tests are shown on the respective logs of test borings in Appendix A-1. The results of the unconfined compressive strength tests are represented graphically in Appendix A-1.

Estimation of unconfined compressive strength on remaining cohesive samples was obtained by performing either a hand penetrometer test or a Torvane test. In the hand penetrometer test, the shear strength of a cohesive soil sample is estimated by measuring the resistance of the sample to the penetration of a small, calibrated spring-loaded cylinder. The maximum capacity of the penetrometer is 4.5 tons per square foot. In the Torvane test, the shear strength of a cohesive soil sample is estimated by measuring the resistance of the sample in shear when twisting a small, calibrated spring-loaded vane pressed into the sample. The results of these tests are shown on the respective logs of test borings in Appendix A-1.

Unit Weight Determination Tests

Unit weight determination tests were performed in accordance with ASTM D2166 on selected cohesive samples from the soil borings. The results of these tests are shown on the respective logs of test borings in Appendix A-1.

In addition to determining unit weights of the soil samples, testing to estimate the unit weight of the Mill Scale sample was performed. To estimate the range of possible unit weights for the material stockpiled at Fort Iron, three test methods were followed. First, the material was loosely placed into



the Proctor mold, to approximate newly stockpiled material. Second, the material was compacted in the Proctor mold following ASTM D698 procedures (Standard Proctor Test). Lastly, the material was compacted in the Proctor mold following ASTM D1557 procedures (Modified Proctor Test). As a follow up to this testing, we compacted the material into a mold following ASTM D1557 procedures and then soaked the sample for 24 hours.

Atterberg Limits Tests

Standard test methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils known as Atterberg Limits were performed on selected soil samples. The Atterberg Limits tests were performed in accordance with ASTM D4318 on selected cohesive samples from the soil borings. Fine-grained soils are tested to determine the Liquid Limit (LL) and Plastic Limits (PL), which are moisture contents that define boundaries between material consistency states. The LL and PL values define the water content boundaries between non-plastic, plastic, and viscous fluid states. The plasticity index (PI) defines the complete range of plastic state. The LL and PI are shown on the respective logs of test borings in Appendix A-1. Graphical results of the Atterberg Limits are included in Appendix C-2.

Grain Size Analyses

Grain size/hydrometer analyses were performed in accordance with ASTM D422 (2007) and D6913 on selected soil samples to evaluate the gradation of the soil represented by the sample. The distribution of particle sizes larger than 75 micrometers (retained on the No. 200 sieve) is determined by sieving, while the distribution of particle sizes smaller than 75 micrometers is determined by a sedimentation process using a hydrometer. Graphical results of the grain size/hydrometer analyses are included in Appendix C-3.

One-Dimensional Consolidation Tests

One-dimensional consolidation tests were performed on select Shelby tube samples from cohesive soils. The tests were performed in accordance with ASTM D2435, Method B. These results are included in Appendix C-4.



3.2 EXPONENT INVESTIGATION

On September 28, the DTE contractor saw cut the pavement and excavated a test trench in Fort Street, just in front of the Stash building. The purpose of the test pit was to locate the 24-inch diameter high pressure gas line to evaluate the condition of the utility. A second test pit was performed on the north side of Dearborn just east of Fort Street, again to attempt to locate the 24-inch diameter high pressure gas line.

3.3 SME INVESTIGATION

SME mobilized a drill rig to the site on September 29, 2021 and drilled one boring, DTE-1, to a depth of 70 feet. The boring was sampled in a similar fashion to the Somat borings. An attempt to install inclinometer casing within this boring failed because the augers failed at a joint. In a separate borehole adjacent to boring SME_B1, performed the next day, two vibrating wire piezometers were installed at depths of 16 and 31 feet. The log and piezometer data for this investigation was shared and included in this report in Appendix A-2.

3.4 TEC INVESTIGATION

TEC initially mobilized to drill one boring, TEC_B1, on September 26, 2021 in the Fort Iron yard, just east of the Mill Scale stockpile. The boring was completed on September 27, 2021, when bedrock was encountered about 87 feet below grades. The boring was sampled in a similar fashion to the Somat borings. On a second mobilization, and under the direction of G2, three borings (G2_B1 thru G2_B3) were started on October 7, 2021 and completed on October 20, 2021. At this time, the results of these test borings are not available. In addition, the naming nomenclature presented here was determined by Somat for the purposes of cataloging the boring locations for this report. The boring logs that will be produced by G2 may include a different naming convention. Somat, through the City, has made a request to have this information shared. As of this date, we have not received any formal information regarding these borings.

3.5 HISTORIC SOIL BORING INFORMATION

Along with the current investigation, several older soil boring logs were located in the area and provided for this report. These include:



- Somat boring in Fort Street in front of 10047 Fort Street from 2021
- MDOT Signal borings at the Fort Street and Dearborn Street Intersection from 2020
- Stoll, Evans, and Associates borings from Koenig Coal from 1979
- SME borings in the vicinity of 10059/10047 Fort Street from 2020

These boring logs are contained in Appendix F.

3.6 SURVEYING

On September 14th, 2021, Hubbell, Roth & Clark, Inc. (HRC) was requested to provide survey support for the incident. On this date, HRC set survey control points throughout the site so that a 3-D Laser Scan and UAS (Unmanned Aerial System / Drone) flight could be completed and tied to each other to provide control for future surveying activities. A horizontal survey control network was established by installing ½" Iron Rebar with survey caps as well as Mag-Nails in pavement. All control points were measured by either robotic total station or by GNSS (GPS) on NAD83 datum with State Plane Coordinates (SPC) South Zone 2113; Real-Time Network solution (RTN) from the Michigan Department of Transportation (MDOT) – Michigan Spatial Reference Network (MSRN) / MDOT CORS. Each GNSS point was measured multiple times and an averaged coordinate value was held. Benchmark and survey control point heights (elevations) were established by running digital level loops from a published National Geodetic Survey (NGS) benchmark PID: NE1004.

After control was established, HRC surveyors completed a 3-D Laser scan from approximately the intersection of Dearborn Street and Gerisch Street; through the intersection of Dearborn Street and W. Fort Street.; along the southwesterly side of the building located at 10023 W. Fort Street and behind the affected building located at 10015 W. Fort Street. The laser scan data was imported into registration software. The laser scanner captures HDR images as well as LiDAR data. Each scan was stitched together onto the survey control network. A point cloud file was generated. This file was referenced into CAD where data was extracted to generate a record topographic survey drawing. This point cloud data set serves as a time stamp of existing conditions which can be referenced at any time and serves as a basis for the project.



A UAS flight was also completed on this date which captures many photo images. The images were stitched together to create two deliverables which included a single photomosaic image and a 3-D point cloud. The image can be used as a time stamp of existing site conditions captured from a bird's eye view. It was also used as background imagery for the CAD drawing and to supplement stockpile elevations on the Fort Iron property where the laser scanner was not able to capture data due to obstructions.

On September 15th, HRC surveyors established additional control on Dearborn Street where the road was uplifted. These points consisted of Mag-Nails set in pavement and in the curbs, and surround the effected roadway to allow for continuous monitoring for any movement in the X, Y and Z directions. These points were established by robotic total station. On this date, HRC also completed a laser scan for record. HRC completed two sets of monitoring: one in the morning and one in the evening.

HRC also completed work on the dates listed below. Note that no survey was performed on days of inclement weather or days with construction traffic that may have disturbed the surveying activities.

September 16th, 2021 <ul style="list-style-type: none"> Monitoring Survey in the Morning Monitoring Survey in the Afternoon 	September 23rd, 2021 <ul style="list-style-type: none"> Monitoring Survey
September 17th, 2021 <ul style="list-style-type: none"> Monitoring Survey Laser Scan UAS Flight 	September 27th, 2021 <ul style="list-style-type: none"> Monitoring Survey
September 18th, 2021 <ul style="list-style-type: none"> Monitoring Survey 	September 28th, 2021 <ul style="list-style-type: none"> UAS Flight
September 19th, 2021 <ul style="list-style-type: none"> Monitoring Survey 	September 29th, 2021 <ul style="list-style-type: none"> Monitoring Survey
September 21st, 2021 <ul style="list-style-type: none"> Monitoring Survey 	October 5th, 2021 <ul style="list-style-type: none"> Monitoring Survey

In addition to this current survey, HRC was able to download historical LiDAR data to compare to current data. The information contained in the 2017 LiDAR survey is included in Figure 5.



4.0 INVESTIGATION RESULTS

4.1 SOIL STRATIFICATION

Soil conditions encountered at the Somat boring locations have been evaluated and are presented in the form of Logs of Test Borings. The Logs of Test Borings presented in Appendix A-1 include approximate soil stratification with detailed soil descriptions and selected physical properties for each stratum encountered in the test borings. In addition to the observed subsoil stratigraphy, the Logs of Test Borings present information relating to sample data, standard penetration test results, groundwater conditions observed in the boring, personnel involved, and other pertinent data. For information, and to aid in understanding the data as presented on the boring logs, general notes defining nomenclature used in soil descriptions are presented immediately following the logs in Appendix A-2. It should be noted that the Logs of Test Borings included with this report have been prepared on the basis of laboratory classifications and testing as well as field logs of the soils encountered.

A generalized description of the soils encountered in the soil borings, beginning at the existing ground surface and proceeding downward, is provided below:

Pavement: Boring Somat_B1 was drilled through asphalt parking lot pavement, about 8 inches thick. Boring Somat_B2 was drilled through the Portland cement concrete sidewalk, about 4.5 inches thick.

Fill Soils: Fill soils consisting of sand, silty sand and sandy silt, or a mixture of these soils were encountered below the pavement in both borings. The fill soils extended to depths ranging between 8 to 8.5 feet below existing grades (elevation 579 to 576 feet). The apparent density of the granular fill soil was medium dense to very loose.

Sandy Silt: Natural loose sandy silt was encountered below the fill in boring Somat_B02, extending to a depth of 13.5 feet (elevation 573 feet).

Medium to Stiff Clay: Natural lean gray clay soils were encountered below the fill in boring Somat_B01 and below the silt in boring Somat_B02. This upper clay soil layer extended to depths ranging from 20 to 25 feet below existing grade (elevation 565 to 562 feet). The



consistency of the native clay was generally stiff to medium. The moisture contents of the clay samples ranged between 27 and 34%.

Soft to Very Soft Clay: Soft to very soft lean gray clay soils were encountered below the medium to stiff clay soil layer in both borings. These clay soils extended to depths ranging from 45 to 55 feet below existing grade (elevation 542 to 530 feet). The consistency of the native clay was generally soft to very soft, and the moisture content ranged between 19 and 50%.

Within this stratum, very soft clay soils having unconfined compressive strengths measured to be between 120 and 280 psf, were present in both borings from depths of 23 to 30 feet, at an elevation range of 562 to 555 feet. The extremely soft clay layer was the thickest in boring Somat_B1.

While drilling both borings, the driller reported significant “squeezing in” of the borehole within this layer.

Medium Clay: Gray lean clay was encountered below the soft to very soft clay soils in both borings, extending to the termination depth of the borings. The consistency of the clay was soft to medium, and the moisture content ranged between 23 and 40%.

A layer of high plasticity (“fat”) clay was encountered between 45 and 47 feet (elevation 542 to 540 feet) in boring Somat_B2.

A layer of clayey fine sand was encountered at the bottom of boring Somat_B1, from 80 to 84.5 feet (elevation 505 to 500 feet).

Boring Somat_B1 was terminated on assumed bedrock, at a depth 84.5 feet (elevation 500 feet)

No reportable gas levels were detected in either boring with the gas meter. No reportable VOC readings were detected in either boring with the PID meter.

Please refer to the boring logs for the soil conditions at the specific boring locations. It is emphasized that the stratification lines shown on the Logs of Test Borings are approximate indications of change from one soil type to another at the location of the boreholes. The actual transition from one stratum to the next may be gradual and may vary within the area represented by the test boring.



4.2 AREA SOIL INFORMATION AND OBSERVATIONS

Based on the shared historical information and the other Somat boring-03-02 (previously drilled for a separate project), the soil conditions encountered in these borings were similar to the conditions encountered in the recent borings.

The Somat boring B-03-02 encountered the soft gray lean clay from elevation 568 to 548 feet, with shear strengths of about 160 psf reported based on testing.

The MDOT signal pole borings encountered the soft clay soils starting at about elevation 575 feet and groundwater at about 5 to 8 feet during drilling and 10 to 18 feet upon completion of drilling.

4.3 GROUNDWATER LEVEL OBSERVATIONS

Groundwater was encountered during drilling in both soil borings at depths of 3.5 and 6 feet below existing grades (elevations 581 feet \pm). Groundwater was not measured upon completion of drilling due to wash rotary techniques. The specific groundwater observations made during our field investigation are presented in the individual boring logs in Appendix A-1.

Based on the available information, the groundwater encountered in the borings is situated in the granular fill material. It should be noted that the elevation of the natural groundwater table is likely to vary throughout the year depending on the amount of precipitation, runoff, evaporation, and percolation in the area, as well as the surface water level of the Detroit River and any other nearby water bodies that may affect the groundwater flow pattern. The groundwater information is only accurate for the time and date the readings were taken for this field investigation.

Further, upon observing various stages of the restoration construction, several areas of wet silt soils were observed in excavations, some of which turned into a flowing silt condition, "bubbling" up to the surface. These conditions could be attributed to residual excess pore water pressure in the soils from the movement of the subsurface soils.



Based on our experience with similar cohesive soils in the area, we estimate groundwater permeability rates of about 10^{-7} to 10^{-8} meters per second. These permeability rates for this type of clay in Michigan are well documented, and accepted by the Michigan EGLE. It is our opinion, laboratory testing of the clay is not necessary for the purposes of the causal report.

4.4 SENSITIVITY OF CLAY SOILS

Sensitivity of the soils is an indication of the reduction in shear strength of the soil when it is subjected to disturbance such as remolding (i.e., during a shear failure event). It is defined as the ratio of the undrained shear strength of undisturbed soil to the undrained shear strength of the remodeled soil at the same in-situ water content.

As described previously in the report, the in-situ vane shear tests were performed for an undisturbed condition and a remolded condition. While we believe that some of the in-situ clays were already disturbed by the ground movement incident, we used the comparison of the undrained shear strength of the “undisturbed” soil versus the undrained shear strength of the remolded soil as a guide to the sensitivity values of the clays. Of the eleven (11) vane shear tests performed by Somat, the average sensitivity of the clay was about 2.5. Historically, in our experience, this sensitivity value ranges from about 2 to 4 for clay soils similar to those encountered on this site.

Based on the classification of sensitivity proposed by Bowles (1996), soils having a ratio equal to between 4 and 8 are “sensitive”, with lower ratios being “insensitive” and higher ratios being “extra sensitive”.

4.5 SUMMARY OF OTHER INVESTIGATIONS AND FIELD OBSERVATIONS

At this time, only the results of the SME investigation were made available to include in this report. Thus far, the TEC/G2 investigation has not been made available for this report, but piezometer readings are summarized in Appendix A-2, and our observations of their drilling operations are summarized in Appendix A-3. In addition, the following observations were noted by Somat personnel who were on site during these investigations.



- The SME boring (SME_B1) encountered similar squeezing soils in the range of 30 to 50 feet below grade.
- The second Exponent test pit, performed on Dearborn near the turning island in the pavement, encountered silty sand and silt material surrounding several known and unknown utilities. The excavation was switched to a soft dig (water lancing and vacuum truck) to attempt to expose the 24-inch diameter high pressure gas line. However, the excavation sidewalls were unable to be maintained and it was abandoned without reaching the gas line.
- The TEC boring (TEC_B1) also encountered similar squeezing soils in the range of 30 to 50 feet below grade. That boring encountered bedrock at an elevation of about 502 feet. The boring was drilled just east of the Mill Scale pile, and encountered fill to an elevation of about elevation 576 feet.
- Two fissures or cracks were noted in the mill scale pile, one on the south side and one on the north side.
- The first G2 boring (G2_B1) encountered mill scale to a depth of about 14 feet, or elevation 576 feet. Below the mill scale, dense sand, gravel, and asphalt millings were encountered below the mill scale, to a depth of 23 feet, or approximately elevation 567 feet. This dense material is consistent with a "platform" described by the Fort Iron foreman that was reportedly constructed to support the stockpile. The other G2 borings encountered similar soft soils below the fill and sand/silt soils, but no evidence of similar "platform" materials. The presence of a "platform" is only based on the material encountered in G2_B1 and conversations with Fort Iron staff. No other evidence or information was available as to the location, size or thickness of this layer.
- Excavation of the heave area in Dearborn revealed several broken utilities, which may be contributing to the groundwater observed in the granular fill.
- Also, during the excavation of the heave area, several pockets of silt and silty fine sand were encountered.
- The test pit in Fort Street extended to a depth of about 6 feet, exposing the 24-inch gas pipe. Observations of the sidewalls in the excavation indicated some movement and a slight shear zone within 5 feet of the east Fort Street curb line.



- In the SME DTE-1 boring, a stacked piezometer was installed adjacent to the boring. Based on the readings shared on October 25, 2021, the groundwater level measured in the piezometer installed to 16 feet was about grade level. The piezometer installed at a depth of 31 feet in the lean clay measured piezometric groundwater pressure at about 15 feet above grade, thus indicating excess pore water pressure consistent with a shear failure of the soil.
- The laboratory testing data for the SME DTE-1 boring was reviewed by Somat on November 5, 2021. In general, multiple tests/types of tests were performed to determine shear strengths and the results are similar to the Somat test results. In addition, of the consolidation tests performed, one predicted slightly less settlement and the other predicted up to 50% more settlement than our original estimate based on our consolidation testing.

4.6 MILL SCALE TESTING

Unit weight tests were run on the Mill Scale sample, as described in section 3.1.3. The results of these tests are as follows:

Compactive Effort	Unit Weight
Loosely Placed	147 pcf
ASTM D698	217 pcf
ASTM D1557	227 pcf
ASTM D1557 (dry)	223 pcf
ASTM D1557 (soaked, 24 hrs.)	236 pcf
ASTM D1557 (drained, 1 hr.)	234 pcf

The moisture content on the air-dried sample was about 3.8%. Our preliminary modeling did not indicate the angle of friction for the mill scale was a critical value, and therefore no additional testing was performed. Based on the angle of repose observed in the field, we conservatively estimated the phi angle to be about 38 degrees and about 1 psi of apparent cohesion to account for chemical cementing of particles.



Please note the minor change in unit weight of mill scale material soaked for 24 hours, and after being drained for one hour. The likelihood of the impact of rainfall on the unit weight of the mill scale, and consequently on the observed failure, is discussed in Section 5.5

4.7 INSTRUMENTATION INFORMATION

At the time of this report, the only instrumentation data available are from the inclinometer installed in Somat_B01, and the SME piezometric data described above. The orientation of the inclinometer casing is generally pointing the primary (A axis) axis towards the former peak of the stockpile (post-incident) at a bearing of about 30 degrees east of north. Since the initial baseline readings on September 16, there are two zones of movement observed:

- The upper granular fill zone (elevation range 584 to 572 feet) has shown a maximum movement of about ¼-inch towards the northwest (60 degrees west of north), with the peak movement about elevation 578 feet.
- While very minor, there does appear to be some rotational movement between 33 and 38 feet below grade, between elevation 549 and 544 feet.

4.8 SOIL PROFILES WITH DEFINED STRENGTH PARAMETERS

In general, two geotechnically related conditions needed to be considered for the analysis performed to support this report. The recent borings performed on and around the failure zone, while heavily sampled and tested, must be considered as a “disturbed” state. That is, the clay sample tests on the disturbed zones of soil represent the post-movement condition and, most likely, a lower strength state. The analysis needed for this report required the clay conditions in the “pre-movement” strength state. We utilized the data provided in the historical borings to evaluate the changes that may have occurred in strength and develop a “pre” soil profile. Based on these assumptions, the following generalized soil profiles were developed for each boring location.

Keep in mind that the shear strengths of sands (granular) and clays (cohesive) are modeled using a cohesion value and an internal friction angle (phi). A pure sand has zero cohesion and a phi angle that is not dependent on whether the condition is short-term (undrained) or long-term (drained). A purely clay soil has cohesion only, unless it is in a long-term condition, then it will



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have cohesion and an internal friction angle contributing to strength. For the purposes of our analysis, an undrained/total stress condition was considered due to the cyclical loading and unloading of the stockpile.

Generalized Soil Profile for Boring Somat B-01				
Elevation	Material	Total Unit Weight (pcf)	Cohesion (psf)	Phi (degrees)
585 – 578 ft	Mixed Clay and Sand Fill	120	0	32
578 – 576 ft	Sandy Silt	115	0	25
576 – 574 ft	Stiff Clay	125	1200	0
574 – 570 ft	Medium Clay	125	900	0
570 – 563 ft	Medium Clay	120	750	0
563 – 556 ft	Soft Clay	120	350	0
556 – 530 ft	Soft Clay	120	400	0
530 – 507 ft	Medium Clay	125	500	0
507 -500 ft	Clayey Sand	120	200	32
500 ft	Apparent Bedrock			

Groundwater Level @ 581 Ft

Generalized Soil Profile for Boring Somat B-02				
Elevation	Material	Total Unit Weight (pcf)	Cohesion (psf)	Phi (degrees)
587 – 578 ft	Mixed Clay and Sand Fill	120	0	32
578 – 573 ft	Sandy Silt	115	144	27
573 – 570 ft	Medium to Stiff Clay	125	850	0
570 – 562 ft	Medium Clay	125	625	0
562 – 559 ft	Soft Clay	120	300	0
559 – 542 ft	Soft Clay	125	350	0
542 – 524 ft	Medium Clay	125	500	0
524 – 502 ft	Soft Clay	130	450	0

Groundwater Level @ 583 Ft

The Mill Scale was modeled with a total unit weight of 230 pcf and a phi angle of 38 degrees. This assumed friction angle was based on our experience and judgement considering the granular, angular nature of the mill scale. The unit weight of the mill scale has a much more profound effect on the failure than the angle of internal friction. The unit weight was confirmed by an independent test performed by one of the other consultants engaged on this investigation.



4.9 OTHER INFORMATION REVIEWED

Along with the geotechnical and survey information noted in the previous sections, aerial historical photographs from Nearmap were compiled to show the historical site usage, presented in Figure 4. In addition, screen shots from security videos were captured and presented in Figure 3 to exhibit changes in the site on the day of the failure.

5.0 CAUSES OF INCIDENT CONSIDERED

The purpose of this report is to provide a hypothesis and rationale for the most likely cause of the incident. To reach that goal, we have considered reasonable, wide-ranging possibilities that may have caused the incident and whether there is merit to those possibilities, eventually narrowing down to our proposed hypothesis. The plausible causes presented in the following text are based on our knowledge and experience with the soil and subsurface conditions in the general area of southwest Detroit, available historical information, the observed site conditions, and the post-incident investigations performed. If other conditions are discovered or determined to be relevant at a later date, we reserve the ability to revisit these conclusions.

5.1 MINE SUBSIDENCE

As noted in section 2.2.1, there is a history of salt mining in this area of Detroit, specifically the Morton Salt facility just west of this area. Based on the literature review conducted and our experience with numerous geotechnical investigations carried out in the southwest Detroit area, we believe there is a general phenomenon of subsidence of the soil that has been occurring during the last decades. However, no clear indication can be drawn to attribute the formation of the sinkholes, the ground subsidence, and the damage to the surface structures **only** to the salt mining operations. We believe the recorded occurrences are the results of a combination of simultaneous causes: consolidation and settlement of soft ground, general lowering of groundwater table, industrial plant operations, and probably salt mining activities. Based on this background, along with the observed **upward** movement of the roadway and Stash building, it is unlikely that the incident was due to any salt mine subsidence or salt mine operations.



5.2 ARTESIAN WATER OR METHANE GAS

This area of Detroit, nearby to the Rouge and Detroit Rivers, is known to have artesian ground water conditions, along with naturally occurring gases; hydrogen sulfide and methane gas. Methane has been responsible for a number of injuries and deaths resulting from fires and explosions. It is believed the methane is a product of either or both degassing of the sedimentary rock underlying the area, or the decomposition of organic substances buried within the glacial soils. Hydrogen sulfide is a highly toxic gas that is usually encountered in deeper excavations (approaching the glacial till or bedrock formations), or during piling operations. Artesian groundwater in this area, near the rivers, has been measured up to 15 feet above the ground surface.

As noted, these conditions are typically found near the interface with the glacial till and bedrock. It would be very unusual for these conditions to reach the surface without a man-made conduit in which to travel. Further, if either artesian groundwater or naturally occurring gasses had made their way to the surface to create the heave, those conditions would have continued to be present at the time of the site visits and the daylighting of either the gasses or the artesian groundwater would have been plainly visible or detectable. No artesian groundwater or gasses were noted during any of our site visits. There were gases visibly emanating from the heaved area, but those were likely from the broken utility lines. And as noted, groundwater was observed, but it appeared to be the natural groundwater table or from broken utility lines.

The readings on the lower piezometer installed by SME for DTE indicate an elevated pore water pressure equivalent to a head of about 15 feet above grade. Three readings were obtained between September 30, and October 12, 2021, and showed decreasing pressure with time. This may represent the decrease in the excess pore water pressure within the subsurface clay as a result of the shearing of the soil and the unloading the stockpile. However, we cannot comment on the validity of the instrument installation or baseline procedures performed by others.

5.3 UTILITY BREAK OR EXPLOSION

Based on the available information, there are several utilities located in the Dearborn right of way: DTE gas lines, DWSD sewers, GLWA water mains and AT&T duct banks. At the time of the



engagement on this project, almost all of these lines were either damaged or shifted due to the heave in Dearborn. To our knowledge, there are no utilities located within the Stash building parcel, other than the service leads to the building. In addition to these noted movements, there were reports of a gas leak in the area for several weeks prior to the incident. The surveillance videos show several DTE personnel on site at the time of the incident, reportedly investigating the reported leak.

The evidence does not point to a possible gas line leak and explosion, as the result would leave more of a crater than a heave. It is possible that a massive rupture of the 16-inch water main could have heaved the soil up, but there would have been more washout of the sand and silt within the utility trenches, than lifting of the entire area.

Further, upon investigating the GLWA watermain, only a 4-foot-long crack was observed in the pipe. The crack is shown in the photo below.





Exhibit 2 - Repair of Watermain

In addition, further east along Dearborn, two (2) abandoned water leads were located, connected to the 16-inch diameter main, extending likely to the former residences on the south side of Dearborn. These lines were observed to be leaking.

There is certainly the possibility of a sewer collapse, but that, again, would leave more of a sinkhole than a heave, as material fills in the void created by the collapse.

So, while either of these, utility break or explosion, may be feasible, neither would explain the heave at the Stash building, which occurred simultaneously to the heave in Dearborn, based on the security footage. Therefore, we believe the broken or shifted utilities are a result of the heave.



However, it should be noted that, prior to the failure incident, utilities within a range of about 50 feet of the existing stockpile, may have experienced lateral deflection and/or settlement as a result of consolidation settlement and lateral squeeze of the very soft clay under the mill scale stockpile. If there were leaks prior to the incident, we do not believe those would have been a direct cause of the movement.

5.4 SEISMIC EFFECTS

As noted, the ground water level is situated only a few feet below the ground surface. In addition, the in-situ vane shear testing indicated an average sensitivity of the clays of 2.5, meaning the clays lose 60% of their strength when disturbed. Considering both of these factors, ground vibrations could impact the strength of the site clays.

However, based on the USGS, no seismic activity has been recorded since 2020, when a magnitude 3.2 earthquake event, located 2 km SSE of Detroit Beach on August 21, 2020, occurred at 6:55 pm local time.

Fort Street carries heavy truck traffic, and the operations of Fort Iron introduces truck traffic onto Dearborn Street. The movement of these heavy trucks would induce ground vibrations to the site. However, considering the frequency of these vibrations and the presence of the groundwater and soft clay which would dampen these vibrations, it is not likely that the vibrations could reach the critical and sensitive soft clay layers.

5.5 EXCESSIVE RAINFALL

As noted in section 2.3, City Airport in Detroit recorded over 10 inches of rain in the 60-day period prior to the incident, which is almost 50% over the normal amount. While the site is located several miles from City Airport, it can be assumed that the Fort Iron site received a similarly large amount of rainfall over that period. This amount of rain would do two things to the site: elevate the ground water table and saturate the mill scale stockpile, thus increasing the unit weight.



The long-term ground water level in this area is influenced by the water level in the Rouge and Detroit Rivers, which was recorded at 575 feet, or about 10 feet below grade, based on the NOAA water level gauge at Fort Wayne. The observed groundwater level in the soil borings performed in September 2021 was about 581 feet, slightly higher than the MDOT borings performed in July of 2020. Therefore, the groundwater level in this area was already within 10 feet of the ground surface. Our preliminary soil stability models analyzed groundwater at both the level encountered in the borings and at grade, which did not yield a significant difference in the results.

More likely, the impact of this amount of rain was to slightly increase the unit weight of the mill scale. As noted in section 4.4, after soaking the material, the unit weight determined by ASTM D-1557 increased by 13 pcf from 223 pcf to 236 pcf. This additional weight equates to about a 5% increase in stockpile unit weight. Our laboratory testing also indicated that after the soaked mill scale was allowed to drain for 1 hour, the unit weight decreased from 236 pcf to 234 pcf. This indicates that the additional weight of the stockpile may increase during but rapidly decrease after the individual rain events. Another way to look at this is that if 6 inches of rain had fallen and been totally contained within the limits of the mill scale stockpile and not permitted to drain, the 6 inches of water would have resulted in an increase of 32.1 pounds of water per square foot (psf) of the area of the pile. With a 20-foot-high pile of mill scale, the weight of the mill scale would have been 4600 psf of pile area. (20 feet times 230 pcf = 4,600 psf). Therefore, the maximum percentage increase in the contact pressure under a 20-foot-high pile would be $32.1 \text{ psf} / 4,600 \text{ psf}$, or about 0.7%, which is a trivial increase. Because the mill scale drains so fast, this hypothetical increase in contact pressure under the stockpile could never be achieved.

The increase in unit weight may have had a very slight impact on the stability of the stockpile as noted in the following sections. So, while the additional rainfall may have had a contributing effect on the incident, it cannot be pointed to as the primary or even a significant factor in the stockpile failure.

Another theory considered was that the additional rainfall saturated the native clay soils to the point where additional unit weight or a softening of the soils, due to an increase in moisture



content, resulted in a failure. Based on our professional experience and knowledge of the type of clay mineral (illite) typically encountered within the clay matrix portion of the soils in this area, we do not believe this was a contributing factor. The natural clay encountered in all of the borings has a very low permeability and it would take decades for water from precipitation or leaking utilities to affect the moisture content of the clay to the depth where the very soft clay was encountered. Additionally, the moisture contents of the soil samples obtained during the drilling of the 1979 historical borings and the 2019 borings are similar or higher than the moisture contents determined for the samples obtained during our recent investigation. A graphical summary of these conditions is presented in Appendix D. Further, areas of wet silt soils were observed in excavations, some of which turned into a flowing silt condition, “bubbling” up to the surface. These can be attributed to residual excess pore water pressure in the soils from the movement of the subsurface soils.

5.6 SOIL FAILURE MECHANISMS

Based on the evidence from observations at the site, the soil and groundwater conditions, our engineering analyses, and what we know of the timeline of the events, the incident appears to be a result of a soil shear strength failure. Soil strength failures can be attributed to inadequate bearing capacity, slope instability, and lateral squeeze (deformation). Two of these mechanisms were analyzed and summarized below. Lateral squeeze was dismissed from our consideration based on the physical appearance of the failure.

Additionally, we performed calculations to estimate the amount of consolidation settlement that could have occurred at the site based on the available data relative to the mill scale stockpile dimensions over the past several years.

Initially, as part of the emergency response, a preliminary subsurface soil profile and global stability model were set up to aid in determining/justifying the steps to stabilize the site and preserve public safety. This modeling and analysis were submitted to the City on September 21 and 29, 2021. The shear strength parameters used for the clays considered the disturbed condition of the site, as seen in the borings, post-movement. For the purposes of evaluating the site in a pre-



movement condition, the soil shear strength parameters were adjusted based on the available data and observations.

5.6.1 Bearing Capacity Failure

A bearing capacity failure occurs when the shear stresses in the soil due to loading exceed the shear strength of the soil, and is generally classified either as a general shear failure, a local shear failure, or a punching shear failure. In a general shear failure, the load bearing area subsides, and the subsurface soil ruptures and pushes the soil up along the sides of the load.

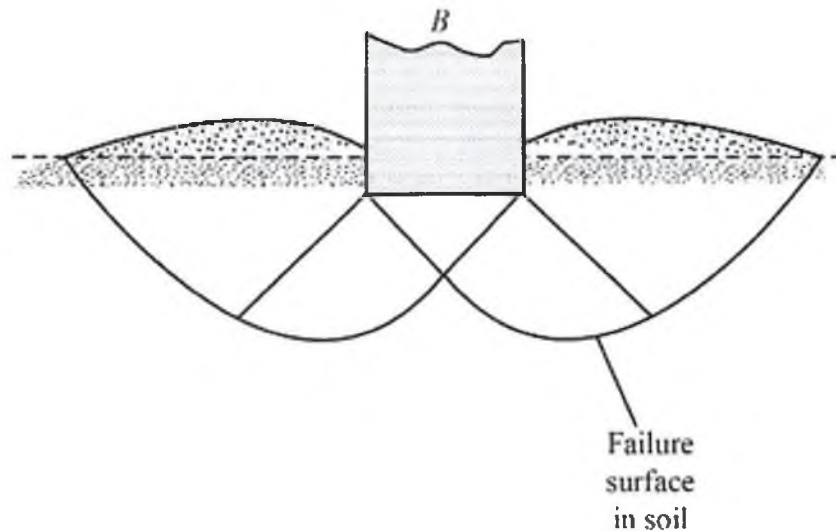


Exhibit 3 - Typical Bearing Capacity Failure Surface

The movement expected with this type of failure would be the dropping/downward movement of the load (mill scale) and a heaving/bulging of the soils adjacent to the load (roadway and parking lot). In addition, surface features within the heaved areas would tip or lean from vertical.

Based on the observations in the field, the areas on Dearborn Street and behind Stash certainly heaved. The video footage shows the mill scale stockpile dropping. And, the utility poles and fencing immediately adjacent to the stockpile tipped inward toward the stockpile.



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Exhibit 4 - Aerial Photo of Overall Movement

In addition, the longitudinal cracks observed around the perimeter of the stockpile are indicators of this type of failure. The typical cracking observed at the site is shown in the two photos presented below, taken by Somat on September 14 and October 2, 2021.





Exhibit 5 - Surface Cracking around Stockpile

As we noted, the exact height of the stockpile at the time of the incident is not known. Based on the topographic information obtained on September 17, 2021, the maximum elevation of the post-incident stockpile was 610 feet. However, from video footage, we also know that a portion of the stockpile was placed to some elevation above 610 feet. This maximum height is unknown. In our analyses, we conservatively assumed that the maximum height of the stockpile was 24 feet above the surrounding roadway and site grades (approximate elevation of about 586 feet), and that the stockpile was formed with a flat top and conical ends/sides. (Reference the topographic map provided as Figure 5, for the plan dimensions of the embankment area used in our analysis). Using this geometry, the observed conditions in the soil borings, and a mill scale unit weight of 230 pcf, we have developed the subsurface profile for the bearing capacity analysis as noted in section 4.6.

Because the borings were performed post-incident, engineering judgement was required to assign strength parameters to the clay layers for the purpose of modeling a pre-failure condition. Once



disturbed to the point of failure, clay soils exhibit a residual shear strength that is a fraction of their peak shear strength. (It should be noted that based on our preliminary analysis, using the actual post-failure values of the shear strengths of the soil samples from our investigation, bearing capacity and slope stability models resulted in unstable conditions, or factors of safety less than 1.)

Of particular interest is the granular fill material encountered below the apparent base of the mill scale in boring G2-B1 performed within the footprint of the stockpile, as described in Appendix A-3. We assume that this may be evidence of a platform that may have been constructed to help support the stockpile. However, we do not know the lateral limits of this material.

We performed bearing capacity analyses of the underlying soils (below elevation 586 feet) using various methods and compared the results to the loading of the mill scale stockpile to determine a plausible range of factors of safety against bearing capacity failure. An estimated maximum stockpile loading of 5,520 psf (at the ground surface) was used to estimate the factors of safety. A description of each model is provided below:

Case 1: Bearing capacity analysis using well-known Terzaghi equation, assuming stockpile dimensions of 90' x 90' bearing on a platform constructed of compacted granular fill below the base of the entire plan area of the stockpile.

Case 2: Same as "Case 1" above, but with the stockpile and platform bearing on clay soil with an averaged cohesion value of $c = 500$ psf.

Case 3: Stockpile bearing on a two-layered system (strong clay layer with average cohesion value of $c = 880$ psf from about elevation 575 feet to elevation 562 feet overlying a weaker clay layer with average cohesion value of $c = 350$ psf).

Based on the bearing capacity analyses described above, we have estimated factors of safety against bearing failure as follows:

Case 1: Estimated ultimate bearing capacity = 58,500 psf, F.S. = 10

Case 2: Estimated ultimate bearing capacity = 3,710 psf, F.S. = 0.67

Case 3: Maximum * estimated ultimate bearing capacity = 4,500 psf, F.S. = 0.82



**Based on minimum stockpile size of 24 ft. x 24 ft., F.S. decreases with increased size.*

A factor of safety greater than 1 indicates the capacity of the subgrade soil is adequate to support the load from the stockpile. A factor of safety less than 1 indicates the weight of the stockpile exceeds the bearing capacity of the soil.

Typically, depending on the variability of a site, loads placed on soils (foundations, embankment, stockpiles, etc.) are designed to have a factor of safety against bearing capacity failure of at least 1.5 and typically 3.0.

Based on our simplified analyses and assumptions, the results seem to indicate that the presence of the granular fill material acting as a platform provided some strength to the subgrade which increased bearing capacity. However, at some point, with increased loading, the integrity of this platform was compromised, and shear failure occurred.

Additionally, the dual heaved areas seem to represent this type of failure.

5.6.2 Slope Failure

Similar to a bearing failure, slope stability failures occur with a shearing of the soil along a failure surface. Slope stability refers to geometries where a slope can withstand its own weight and other forces without exhibiting movement. When the weight or forces exceed the resistance provided by the soil, movement occurs. These failure surfaces are typically circular, rotating around a point with the driving (upslope) loads being resisted by the shear strength along the circular arc and any other loads on the toe of the slope. The results of these slope failures are similar to the bearing failures: the dropping of the load (mill scale), a heaving/bulging of the soils adjacent to the load (roadway), and the tipping of surface features from vertical.



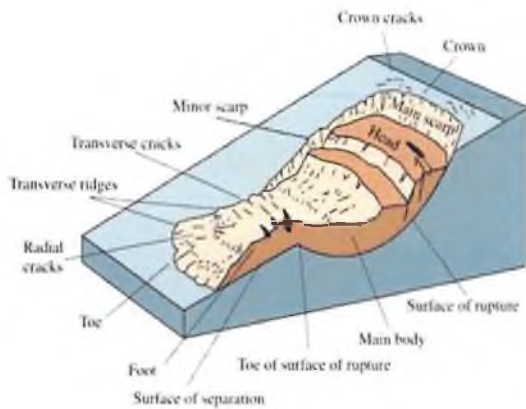


Exhibit 6 - Typical Slope Failure



Exhibit 7 - Photo of Scarp

In order to evaluate the factor of safety against global stability failure, the slope stability analyses were performed using the “SLIDE” computer program by Rocscience of Toronto, Ontario, Canada. The SLIDE program evaluates the safety factor of circular or non-circular failure surfaces in soil or rock slopes. This program analyzes the stability of slip surfaces using vertical slice limit equilibrium methods, including the Janbu Simplified, Bishop Simplified, and Spencer methods. The Janbu Simplified method makes some simplifying assumptions and satisfies only some of the equilibrium conditions. The Spencer method is considered more rigorous (and comparatively more accurate) than the other two methods, since it accounts for a satisfaction of three conditions of equilibrium (force equilibrium in the horizontal and vertical directions and the moment equilibrium condition).

Our analysis took into consideration the following basic global stability parameters; location and shape of the potential failure surface, internal friction angle and/or cohesion of the various soils, density of the various soils, and location of the estimated groundwater surface, utilizing the design soil profiles for soil borings Somat_B1 and Somat_B2 noted in section 4.6.

The results of these analyses indicate that for the given stockpile footprint and height and the assumed soil strength parameters, the Fort Iron stockpile site may have had a factor of safety



close to 1 or slightly below (0.82 to 0.96). The graphical results of these analyses are available in Appendix E.

Typically, failures of this type occur in a single direction. For the site to have heaved in the two areas of Dearborn Street and Stash, two separate slope failures would have had to occur.

5.6.3 Consolidation Settlement

As noted, the underlying natural clays are soft and highly compressible. Consolidation settlement is the process where soil changes volume as a response to change in applied pressure. An increase in applied pressure on the soils results in water within the soil voids also increasing in pressure (pore pressure). This increase in pressure is slowly released as water is expelled from the soil, and as a result of the loss of water, the volume of the soil decreases. This process takes time and the rate of consolidation is dependent on the hydraulic conductivity of the soil (rate at which water will flow through the soils), as well as the distance to any drainage pathways within, above, or below the compressible layers. Therefore, it is likely that the subsurface soils in the area under the mill scale stockpile have been consolidating for years concurrent with the addition of the mill scale to the stockpile.

Based on the consolidation testing performed, and our experience with modeling clay soils in the Detroit area, we calculated that a maximum of about 36 inches of consolidation settlement could occur from the placement of a 24-foot-high mill scale stockpile load having approximate footprint dimensions of 170 feet by 170 feet. Unfortunately, we do not have detailed survey data from before the incident that would have recorded the progression of the stockpile dimensions across the site in time, along with settlement of the surrounding area. To reach a maximum settlement, it would take many years, but we estimate that in 1 to 2 years, about 10% to 20% of the maximum settlement could occur, or about 3 to 7 inches.

Consolidation settlement of the clay soils below the stockpile could lead to destabilizing or cracking of the granular platform under the stockpile, along with the movement of surrounding utilities.



However, based on the thickness of the pavement in Fort Street and Dearborn Street, it is possible the pavement structure bridged the soil settlement under the respective roadways. In addition, the predicted consolidation may have caused some utilities to move and shift, possibly causing compromised gas lines, which could explain the gas odors (i.e., leaks) reported by neighboring residents.

Our analyses indicated that the consolidation settlement for the presumed stockpile dimensions could extend out 50 feet in each direction from the edges of the stockpile.

The additional effect of the consolidation and settling of the stockpile area would be an apparent "lowering" of the stockpile, likely leading to more stockpiling of the material and increasing the stockpile load. The magnitude of the consolidation/settlement would be greatest under the middle of the stockpile, creating a bowl effect under the stockpile, allowing for pooling of groundwater.

6.0 CONCLUSIONS

The prior section summarizes the possible causes considered for the incident, with the most likely cause being the heavy unit weight and height of the mill scale stockpiled on the Fort Iron site. Ultimately, it is our professional engineering opinion that the weight of the stockpiled material exceeded the shear capacity of the underlying clay soils to cause the heaved areas and disruption to the structures adjacent to the Fort Iron site. It is our opinion that other factors such as groundwater due to above-average precipitation or leaking utilities did not have any significant effect on the failure and the primary cause of the soil failure was the load imposed by the mill scale stockpile.

It does appear that the readings obtained from the inclinometer installed in Somat_B-01 did detect a zone of residual soil movement between elevations 549 and 544 feet, which correlates to a zone of very soft to soft clay.



From our analysis, it is unclear as to why the failure happened at the day and time it did. What was special about the evening of September 11, 2021? With geotechnical failures of the types analyzed, they can be gradual until a critical amount of load or a critical amount of movement is reached. Based on our involvement with the reconstruction of the M-85 Bascule bridge, which is approximately 1,500 feet away from the incident site, the soft clay soils in the area of the bridge have experienced a slow creep under sustained load. Prior to the bridge reconstruction, the two-leaf bridge would regularly need the ends of the spans shaved so that they would close due to the abutments shifting together. The theory of the failure was that the river embankment slopes were slowly moving over the years.

With the stockpile at the Fort Iron site, the operations of the scrap yard were cyclical, and the height of the mill scale varied over the three years of available data. Sometimes it was near the critical height that we calculated to be about 20 feet (based on the two-layer bearing capacity analysis), and sometimes it was less than this.

One reasonable explanation for the timing of the incident could be that the underlying soft clays had consolidated over several years under the stockpile loading. On this particular day, the strain in that settlement reached a point to create a shear crack in the "platform" soils under the stockpile. This would have greatly reduced the shear strength capacity of that profile, allowing for a rapid bearing capacity or slope failure. The slow-occurring and time-dependent consolidations would also slowly shift surrounding utilities, which could cause breaks in piping and leaks.

Based on our observations, research, and calculations, it is our engineering opinion that the placement and height of the mill scale is the sole cause of the movement, with the mechanism of failure (bearing capacity, slope stability, or a combination that included consolidation settlement) left to interpretation.

While our soil borings performed within the project vicinity showed clay soils with low strength, we acknowledge that these soils may be disturbed from the movement. However, with the historical borings in the area available for this report, the sensitivity of the clay soils, and the



modeling prepared for the analysis, we believe the shear strengths used in the modeling are a reasonable estimate.

In addition, we have provided data showing that the shear strength of the clay is independent of moisture conditions. Further, the moisture conditions in the clay soil samples obtained recently are similar to the moisture conditions in the historic borings. All of which indicate that a leaking utility or excessive rainfall did not reduce the shear strength of the clay soils.

7.0 LIMITATIONS

The information, analysis, and conclusions presented in this report are based on the information collected by Somat during our investigation and research, along with other information provided by the City and participating consultants. Should additional information be provided after the submission of our report, we reserve the right to review our conclusions and update if necessary.



EXHIBIT J

Ronayne, Louie

From: Kaveh Kashef <kkashef@fortiron.com>
Sent: Thursday, December 16, 2021 8:41 PM
To: James Nosedo; Charles Raimi; McCarthy, Daniel J.; Ronayne, Louie
Subject: RE: [EXTERNAL]Fort Iron v City of Detroit et al, Request for Waiver of Service
Attachments: 9607 Dearborn Letter to Kaveh Kashef.pdf; Emergency Correction Order 9607 Dearborn - REV 12-16-21 V2.pdf

Jim,

We respectfully disagree with your assessment regarding the City of Detroit's (the "City's") apparent influence on the 4th Precinct's actions yesterday. Until today, we have been operating safely for three months without incident or complaint from the City or our residents. The warning from the 4th Precinct after the filing of the Complaint is more than coincidental and today's surprise visit accompanied by an unwarranted emergency correction order (detailed below) only further reinforces the reasons underlying our complaint.

In further support of the due process concerns outlined in the Complaint and our concerns regarding City retaliation, you can review the attached correspondence we received today from the City and a Corrective Action Order (the "Order") we received this afternoon. The Order has been improperly issued and, for the reasons set forth below, we request an immediate conference with you pursuant to L.R. 7.1 to discuss our request for a stay of the Order.

At approximately 4 p.m. this afternoon, Inspector Carl Craik from BSEED showed up unannounced to our offices and demanded an inspection of our facility. I politely informed Mr. Craik that he could not perform an inspection at which time he advised that he had the unilateral right to inspect our facility in whatever manner he wished, with or without cause. Despite his threat, I again advised Mr. Craik that he could not perform the inspection and instructed him to have someone from his office contact us to advise as to the purpose of an inspection. Mr. Craik returned to his vehicle and in less than five minutes delivered the Order to our office.

The first page of the Order states: "Inspection result: FAIL." On its face, the Order is wrong as no inspection occurred. To reiterate, we politely declined the inspection as was our right under the Detroit City Code. Instead of following the required procedures for a bona-fide inspection, Mr. Craik obviously came to our property today—the day that you advised us to serve your office—with a predetermined "FAIL" result, no matter what he observed at our facility. How the City could have pre-determined a "failure" and issued the Order before an inspection had even occurred is inexplicable.

Further, the Order cites a "COMMERCIAL EMERGENCY," but does not state what the "emergency" is or the basis for claiming an emergency. As noted in great detail in the Complaint, since the event on September 11 (the "Event"), there is no data to suggest an "emergency." In fact, the totality of the data suggests the opposite: that Fort Iron's operations at its facility are totally safe for operations. We cite to the following: (1) a September 13 report from Spalding DeDecker determining that the facility is safe for operations as long as we operate under certain conditions (all of which we have met); (2) three months of vertical and horizontal ground monitoring data (as conditioned by Spalding DeDecker), which has shown no relevant ground movement (notably, the City has long-since ceased its ground monitoring efforts, again, demonstrating a lack of safety concerns); (3) a November 17 report from G2 Consulting determining that the facility is safe for operations as long as we operate under conditions (all of which we have met); (4) at the request of the City, we reduced the ground elevation of the area impacted by the Event to 591 feet, which the City's engineers determined was "safe"; (5) at the recommendation of G2 Consulting, we have reduced the heights of our high-density scrap materials and reduced the overall quantity of those on-site materials by 50%; (6) we have been operating at our facility (with the approval of the City) without incident for the past 3 months; (7) we are not in violation

of any ordinances; and (8) on numerous occasions, City officials have stated that, before and after the Event, we have been operating “legally.”

To the extent the City cites to the recent ground failure events at Revere Docks or at a storage facility in River Rouge, those events occurred miles away from our facility and occurred under completely difficult circumstances. They are inapposite the circumstances at Fort Iron’s facility and the mountain of data supporting the safety of our operations.

The Order cites 10 bullet-pointed items the City would like from us. As outlined in the Complaint, for nearly two months we have had discussions with the City’s Corporation Counsel to get clarity and agreement as to what additional information the City required from us. As outlined in the Complaint, I had been working with Corporation Counsel to schedule a meeting between the City and Fort Iron’s engineers in this regard. As outlined in my December 4 letter (attached to the Complaint), the bullet points are vague in some respects and request information that is not relevant. However, we have been and remain prepared to provide relevant data.

In his letter, Mr. Bell states “Fort Iron has refused repeated requests to provide the City with the technical data upon which Mark Stapleton of G2 Consulting Group made the summary conclusion on November 17, 2021.” ***This is demonstrably false.*** We have painstakingly tried to offer the data, but with the request that the City meet with us to confirm exactly what data (a lot of data has been collected since the Event) is necessary to satisfy the City’s demands. Corporation Counsel and I were planning a meeting when the City elected to unilaterally threaten a shutdown. Then, when we acceded to the date demanded by the City (Monday, December 6), Mr. Bell and his office went “radio silent.”

The City’s actions since December 3 (when it threatened to shut down Fort Iron) belie the over two months of cooperation we and the City have afforded each other and contradict Corporation Counsel’s own December 1 email to schedule a meeting between the engineers. This unilateralism and disregard for our rights to operate and stay in business are completely unnecessary.

I cannot reiterate enough that filing the complaint was the absolute last action we wanted to take. We are not in the litigation business. We don’t want to fight with the City and are not asking for special treatment. But at the same time, for the sake of our business and our families, we cannot tolerate what is nothing other than an unfair political and retaliatory bullying tactic by a building official.

We request a conference with you under L.R. 7.1 to seek a stay of this Order. We sincerely hope that your direct engagement in this process can facilitate clarity between the parties and delivery of the information the City has requested. Given the urgency of the Order (it requests compliance by 12/21/21 – which is an impossibility), please advise as to your availability tomorrow, Saturday or Sunday for a call.

Kaveh

Kaveh Kashef
Fort Iron & Metal Company
kkashef@fortiron.com
(313) 971-7023

From: James Nosedo <nosedj@detroitmi.gov>
Sent: Wednesday, December 15, 2021 7:27 PM
To: Kaveh Kashef <kkashef@fortiron.com>; Charles Raimi <raimic@detroitmi.gov>; Dan McCarthy (mccarthyd@butzel.com) <mccarthyd@butzel.com>; Ronayne, Louis <ronayne@butzel.com>
Subject: Re: [EXTERNAL]Fort Iron v City of Detroit et al, Request for Waiver of Service

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Service on the City can be accomplished by delivery of the summons and complaint to the Law Department reception (5th floor, Coleman A. Young Municipal Center), and also mailing a copy by certified mail addressed to the Corporation Counsel. See, MCR 2.105(G).

In this case, it will be sufficient if you deliver the summons and complaint to the Law Department reception. It will be processed in the same manner as the many hundreds of other complaints we receive yearly. Mailing will not be required. I will accept service on behalf of Director Bell on the same terms.

To my knowledge, the police department has not taken any action as a result of the lawsuit, and there is no reason to believe so. Detroit police respond to citizen complaints, as do officers in any other city. There are businesses and residents adjacent to and near your facility. Any one of them may have complained about the trucks lined up on the street. The officer who issued the warning was simply doing his or her job. You should seek to schedule truck arrivals so as to avoid causing the street to be blocked or backed up with idling diesels. It does appear that the repairs on Fort Street are nearing completion which should resolve the issue.

From: Kaveh Kashef <kkashef@fortiron.com>

Sent: Wednesday, December 15, 2021 5:43 PM

To: James Nosedo <nosej@detroitmi.gov>; Charles Raimi <raimic@detroitmi.gov>; Dan McCarthy <mccarthyd@butzel.com> <mccarthyd@butzel.com>; Ronayne, Louis <ronayne@butzel.com>

Subject: [EXTERNAL]Fort Iron v City of Detroit et al, Request for Waiver of Service

Mr. Nosedo,

We are advised by Mr. Raimi's email below that you are lead counsel on behalf of the City in the above-referenced matter.

I would like to address two issues.

First, will you be waiving service of the complaint? Out of professional courtesy, we have not commenced efforts to formally serve your client. If you do not advise in the affirmative by tomorrow morning, we will commence with our efforts tomorrow.

Second, today, we received notice that an officer from the 4th Precinct's traffic enforcement division gave Fort Iron & Metal a "warning" because of trucks that, from time to time, become temporarily backlogged on Dearborn Street. We explained to the officer that this occurs because Dearborn Street is presently closed to through traffic and that a portion of our facility is inaccessible due to construction. We were advised by the officer that there had been "complaints."

First and foremost, none of the trucks that visit our facility impede residential traffic.

Further, the occasional occurrence of a truck getting stuck on Dearborn Street as it awaits entry to our facility has been going on for three months. This has occurred under the watch of representatives from the City of Detroit including,

DPW, DWSD, BSEED and the Mayor's office. In fact, on numerous occasions, representatives from the City have facilitated and approved our operations including the fact that trucks occasionally get backlogged on Dearborn Street.

This action by the 4th Precinct seems related to the timing of the filing of our complaint last week. For three months, we have had no issues with the local residents or the City regarding our operations. There have been no complaints and there have been no visits by the 4th Precinct. Of the few issues that have arisen on Dearborn Street as a result of the City or DTE's construction efforts (usually the City or DTE's equipment or materials impeding residential traffic or our operations), they have been cooperatively and expeditiously resolved.

Please communicate with whatever internal offices or departments in the City to address this issue. If you would like to discuss this further, I would be happy to have a discussion, at your convenience. As always, we remain ready to work with the City to address any issues.

Kaveh

Kaveh Kashef
Fort Iron & Metal Company
kkashef@fortiron.com
(313) 971-7023

From: Charles Raimi <raimic@detroitmi.gov>
Sent: Tuesday, December 14, 2021 10:14 AM
To: McCarthy, Daniel J. <mccarthyd@butzel.com>; Ronayne, Louie <ronayne@butzel.com>
Cc: James Noseda <nosej@detroitmi.gov>
Subject: FW: [EXTERNAL]Fort Iron v City of Detroit et al, Request for Waiver of Service

Jim Noseda will be lead on this case.

Chuck Raimi
Deputy corporation counsel
313 237 5037

From: McCarthy, Daniel J. <mccarthyd@butzel.com>
Sent: Tuesday, December 14, 2021 10:09 AM
To: Charles Raimi <raimic@detroitmi.gov>
Cc: Kaveh Kashef <kkashef@fortiron.com>; Ronayne, Louie <ronayne@butzel.com>; Gillis, Michelle <gillis@butzel.com>
Subject: [EXTERNAL]Fort Iron v City of Detroit et al, Request for Waiver of Service

Hi Chuck,

I'm following up on the email I sent last week regarding this matter. Please let me know if you will be appearing for the defendants and, if so, if you can waive service.

Sincerely,

Dan McCarthy

Daniel McCarthy

Shareholder
mccarthyd@butzel.com

Direct: (248) 258-1401 | Mobile: (248) 561-7484



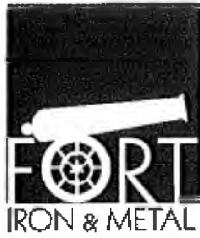
Main: (248) 258-1616 | Fax: (248) 258-1439
201 W. Big Beaver, Suite 1200 | Troy, MI 48084



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9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

December 17, 2021

Via Email

James D. Nosedá, Esq.
Supervising Assistant Corporation Counsel
City of Detroit Law Department
Coleman A. Young Municipal Building
2 Woodward Avenue, 5th Floor
Detroit, MI 48226
nosej@detroitmi.gov

Re: *Fort Iron & Metal Company v. The City of Detroit* (the “Litigation”)

Dear Mr. Nosedá:

This correspondence is a follow-up to my multiple requests to meet and confer pursuant to L.R. 7.1, as well as to reopen communications between the City of Detroit (the “City”) and Fort Iron & Metal Company (“Fort Iron”). We are disappointed in your abrupt ending of the call as the City appears unwilling or perhaps unable to discuss any clarification or modification of its improper December 16, 2021 Emergency Correction Order (the “Order”).

As written in your email, all the City has offered is to extend the due date for “compliance with the December 16, 2021 Correction Order, including G2’s report with supporting data (sic)” to January 7, 2022. Again, we wish that you would agree to schedule a meeting between the City and Fort Iron’s respective engineers to avoid any misunderstanding as to what additional information is necessary to support the reports of two experts who have given opinions as to the safety of Fort Iron’s operations.

Despite this approach by the City, it remains our preference to avoid motion practice with the City and offer the following:

DATA SUPPORTING THE G2 REPORT

Attached with the correspondence, please find:

1. Preliminary soil boring data and lab testing data;
2. Prism monitoring data;
3. Vertical monitoring data;
4. Monitoring data location descriptions; and
5. Ground vibration monitoring report.



9607 Dearborn
 Detroit, Michigan 48209
 Phone: 313-357-FORT
 Fax: 313-841-8913

In addition to this information, in the preparation of its November 17, 2021 report (the “Report”) and the opinions contained therein, G2 Consulting (“G2”) reviewed current photographs, historical images from Google Earth, conducted numerous on-site inspections of the Fort Iron’s facility, and interviewed Fort Iron representatives to discuss and understand historical operations. G2 also reviewed an old and new topographical survey performed by Spalding DeDecker.¹ Moreover, in an abundance of caution and, consistent with the opinions set forth in its November 17 report, in an abundance of caution, G2 recommended that Fort Iron reduce the heights of its high-density stockpiled materials (*e.g.*, mill scale). To that end, in the past several months, Fort Iron has been gradually and carefully reduced the quantities of its high-density materials by approximately 50%.

Further, unlike the City, Fort Iron has continued its monitoring efforts (for nearly two months, twice daily) to ensure that its operations have had no impact on the ground of its facility. We can only speculate the City ceased its monitoring efforts based on the three continuous months of Fort Iron’s safe operations

We believe that this data, along with the September 15, 2021 report from Spalding DeDecker which the City relied upon to reopen all of our operations, support the established safety of our operations and only undermines the City’s vacuous claim of an emergency. As such, we again ask the City to provide us with whatever data it possesses to demonstrate that Fort Iron’s *current operations* pose any safety risk.²

INSPECTION OF FORT IRON’S FACILITY

On December 16, a representative from the City’s Buildings, Safety Engineering & Environmental Department (“BSEED”). The visit was unannounced, the representative had zero geotechnical tools or equipment on him, and, most incredibly, the representative came armed with the Order already printed. The request for an inspection was politely declined with a request by me that BSEED contact me to discuss the purpose of the inspection and to schedule a mutually agreeable time. We again reiterate that request.

¹ Because of my lack of technical experience, I cannot provide these topographical surveys at this time. If this is something the City would like, I can arrange to have them delivered to the City next week.

² We anticipate the City will rely upon the December 13, 2021 Report on Geotechnical Evaluation by Somat Engineering (the “Somat Report”) to claim “lack of safety.” **However, that report is not a geotechnical report as to the safety of our operations.** Your apparent refusal to understand this crucial distinction appears to be fueling this unnecessary conflict. As stated in its cover letter, the report is a “geotechnical evaluation for the ground upheaval incident at the intersection of Fort and Dearborn Streets.” Fort Iron, based on the recommendation of its experts and its own due care, has not engaged in any activities near the area of the incident that is the subject of the Somat Report.



9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

We will remind you that, prior to yesterday, Fort Iron has never rejected any request by the City or its engineers for an inspection of its facility. However, in every case, the City gave prior notice, identified the purpose of the inspection and who the participants would be. Here, we suggest that, for the mutual benefit of the City and Fort Iron, **it may be productive for G2 and Somat to coordinate borings to be performed at various other locations at the facility and with the agreement that the data will be shared with the City.** This process was successfully undertaken previously by Fort Iron and the City and certainly could be done so again.³

In light of the foregoing information and data, we ask the City to stipulate to a stay of the Order for 28 days (*i.e.*, to January 14, 2022). With the time afforded in that stipulation, we can work together to reach an agreement as to the scope of a proper inspection as suggested above or perhaps otherwise (with the City's outside engineers present) and work together to determine what, if any, other information or data the City may require.⁴ Absent this agreement, we will have no choice but to seek relief from the Court.

Should you have any questions, do not hesitate to contact me at any time.

Very truly yours,

Kaveh Kashef

Attachments

cc (via email): Charles Raimi, Esq.
Daniel J. McCarthy, Esq.
G2 Consulting
Spalding DeDecker
Frank C. DeNardo, Jr.


³ I am certain the City's engineers can attest to the difficulty in scheduling the performance of soil borings. At no points from September 11, 2021 to the present has the City request that Fort Iron perform borings anywhere other than in the two locations where G2 conducted its testing.

⁴ As to the "bullet points" identified in the Order, we refer you to my December 4, 2021 correspondence which addresses each.


1. Preliminary soil boring data and lab testing data.



Legend

 Soil borings drilled between October 6 through October 20, 2021 by Test Engineering & Consultants, Inc.



Soil Boring Location Plan			
Fort Metal and Iron Company			
9607 Dearborn Street			
City of Detroit, Wayne County, Michigan			
	Project No. 213688		
	Drawn by: MGD		
	Date: 12/6/21	Plate No. 1	
Scale: NTS			

Project Name: Fort Iron and Metal Company

Soil Boring No. B-01

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

CONSULTING GROUP

G2 Project No. 213688

Latitude: 42.2933145° Longitude: -83.1359031°

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 111.2 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
106.2		Mill Scale: Loose to Medium Compact Black Silty Sand with trace gravel and metal fragments	5	S-01	4 6 5	11			
				S-02	4 4 3	7			
				S-03	4 4 3	7			
				S-04	5 4 4	8			
101.2		Mill Scale: Very Loose Black Silty Sand with trace gravel and metal fragments	10	S-05	3 3 3	6			
				S-06	3 1 2	3			
				S-07	2 2 2	4			
96.2				S-08A S-08B	23 50/5"	---			
		Fill: Very Compact Brown and Dark Brown Silty Sand with trace clay and gravel	20	S-09	26 50/4"	---			
91.2				S-10	50/3"	---			
				S-11	33 32 50/5"	---			
				S-12	3 3 4	7			
86.2		(Stained Appearance) Loose Brownish Gray Silty Sand	25	S-13	1 3 7	10			
				S-14	1 2 6	8			
				S-15A	4 4				
81.2				S-15B	5	9	18.1		4500*
		(Poor Recovery @ 28-feet - Blowback Encountered) (Gray Silt in Tip of Spoon) Loose Gray Silt with trace clay (Poor Recovery) Stiff Gray Silty Clay with trace sand and gravel (3-7/8 inch Casing Set to 32-feet) (Unable to Washout Casing - Boring Offset North 10 feet) (Offset Boring Profile Drilled to Depth) (E.O.D.O 10/6/2021) (No Recovery @ 34 feet)	30	S-16	1 2 3	5	32.7		2500*
				S-17	1 2 4	6			
					1				
76.2									

Total Depth: 89.9 ft
 Drilling Date: October 6, 2021
 Inspector: MD, ET, CS
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger to
 60 feet; 3-7/8 inch inside diameter cased
 mud-rotary

Water Level Observation:
 9-feet 10-inches during drilling; groundwater level
 obscured due to drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane
 *** Vane

Excavation Backfilling Procedure:
 Cementitious grout

Figure No. 1a

Project Name: Fort Iron and Metal Company

Soil Boring No. B-01

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

CONSULTING GROUP

G2 Project No. 213688

Latitude: 42.2933145° Longitude: -83.1359031°

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 111.2 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		(E.O.D.O 10/7/2021)		S-18	1 2	3	29.2		1500*
		Medium to Stiff Gray Silty Clay with trace sand and gravel (<i>continued</i>)		ST-19			30.8		2000**
71.2			40	S-20	1 1 2	3	30.9		1200**
		Very Soft to Soft Gray Silty Clay with trace sand and gravel		ST-21			21.3	105	260 800**
66.2			45	S-22	WOH 1 1	2	29.6		400**
			46.0	VS-23					800***
		Medium Gray Silty Clay with trace sand and gravel	48.0	S-24	WOH 1 1	2	24.0		1200**
61.2			50	ST-25			25.8	99	210 400**
		Very Soft to Soft Gray Silty Clay with trace sand and gravel (Hole Squeezed - See S-30)		S-26	WOH 2 2	4	25.9		800**
56.2			55	S-27	2 2 2	4	23.4		1000**
		(E.O.D.O 10/8/2021)	56.0	ST-28			27.2		600**
				S-29	1 1 2	3	24.7		1200**
51.2		(Hole Squeezed Above Sample Interval at Approx. Depth of 53-feet) (3-7/8 inch Casing Set to 60-feet)	60	S-30	1 2 2	4	25.1		1200**
		Medium to Stiff Gray Silty Clay with trace sand and gravel		ST-31			26.5	107	1010 1100**
46.2			65	S-32	1 2 3	5	22.1		1000**
				S-33	1 1 2	3	23.0		1200**
				S-34	1 2 3	5			1000**
41.2			70.0	VS-35					2320***

Total Depth: 89.9 ft
 Drilling Date: October 6, 2021
 Inspector: MD, ET, CS
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger to
 60 feet; 3-7/8 inch inside diameter cased
 mud-rotary

Water Level Observation:
 9-feet 10-inches during drilling; groundwater level
 obscured due to drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane
 *** Vane

Excavation Backfilling Procedure:
 Cementitious grout

Figure No. 1b

Project Name: Fort Iron and Metal Company

Soil Boring No. B-01

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

G2 Project No. 213688

Latitude: 42.2933145° Longitude: -83.1359031°

SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 111.2 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Soft Gray Silty Clay with trace sand and gravel (E.O.D.O 10/9/2021) (To Resume 10/12/2021)	72.0	S-36	1 2 2	4	22.6		800**
36.2			75	S-37	1 2 3	5	24.8		1000**
				S-38	1 2 3	5	24.2		1000**
				S-39	2 3 3	6	19.2		1400**
31.2			80	ST-40			24.4	110	680 1000**
		Medium Gray Silty Clay with trace sand and gravel		S-41	3 4 4	8	16.3		1400**
				S-42	2 4 4	8	13.4		1200**
26.2		(Vane Seated - Vane Attempted) (Poor Casing Cap Connection - Vane Test Depth Abandoned) (No Sample Recovery Due to Vane Push)	85	VS-43					
				S-44	1 2 3	5	37.6		1400**
21.2			89.4 89.9	S-45A S-45B	3 4 18		11.2		1600**
		Medium Compact Gray Clayey Sand with trace gravel (Hardpan) (Spoon Refusal - 50/5" @ 89'11") (No Recovery)	90			22			
		End of Boring @ 89.9 ft							
16.2			95						
11.2			100						
6.2			105						

Total Depth: 89.9 ft
 Drilling Date: October 6, 2021
 Inspector: MD, ET, CS
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger to
 60 feet; 3-7/8 inch inside diameter cased
 mud-rotary

Water Level Observation:
 9-feet 10-inches during drilling; groundwater level
 obscured due to drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane
 *** Vane

Excavation Backfilling Procedure:
 Cementitious grout

Figure No. 1c

SOIL / PAVEMENT BORING 213688.GPJ 20150116 G2 CONSULTING DATA TEMPLATE.GDT 12/6/21

Project Name: Fort Iron and Metal Company

Soil Boring No. B-02

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

G2 Project No. 213688

Latitude: 42.2934902° Longitude: -83.1356920°

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 109.7 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Mill Scale: Black Silty Sand with trace gravel and metal fragments	2.0	S-01	7 7 5	12			
104.7		Fill: Black Clayey Sand with trace gravel and glass, brick, lineoleum	5	S-02	10 12 12	24			
		Mottled Brown and Gray Silty Clay with trace sand and gravel (Poor Recovery - Blowback Possible)	5.8 6.0	S-03	9 9 7	16	17.3		9000*
			8.0	S-04	3 4 4	8			
99.7		Gray Silty Sand with trace gravel (Stained Appearance at Top)	10	S-05	2 3 3	6			
		(Auger Plug Difficult to Extract) Gray Silt with trace clay	10.5	S-06	2 4 6	10	22.2		
94.7			13.8	S-07	3 3 2	5	26.7		2500*
		(Offset and Profile Drilled to 16-feet Due to Difficulty of Advancing Casing) (E.O.D.O 10/15/2021)	15	S-08	2 2 3	5	30.1		2000*
				S-09			29.4		
89.7		(Occasional Silt Seams)	20	ST-10			27.8	95	2300
				S-11	2 1 1	2	29.9		1000**
84.7		(Occasional Silt Seams) Gray Silty Clay with trace sand and gravel	25	ST-12			28.7	96	1690 1200**
				S-13	1 1 1	2	30.4		1000**
		(Vane Rotation Refusal and Rebound - Invalid Test)		VS-14					
79.7			30	S-15	WOH 1 1	2	26.5		600**
				ST-16			44.9	84	570
				S-17	WOH WOH 1	---	18.2		800**
74.7			35		1				

Total Depth: 89.9 ft
 Drilling Date: October 15, 2021
 Inspector: MD, ET, ZL
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger;
 3-7/8 inch inside diameter cased mud-rotary

Water Level Observation:
 9-feet during drilling; groundwater level obscured due to drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane
 *** Vane

Excavation Backfilling Procedure:
 Cementitious grout

Figure No. 2a

Project Name: Fort Iron and Metal Company

Soil Boring No. B-02

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

G2 Project No. 213688

Latitude: 42.2934902° Longitude: -83.1356920°



SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 109.7 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
				S-18	1 1	2	33.4		400**
				ST-19			17.8	104	490 800**
69.7			40	S-20	1 1 1	2	28.2		600**
				S-21	1 0 1	1	57.8		400**
64.7			45	ST-22			46.5	89	520 800**
				S-23	WOH WOH WOH		58.3		200**
				S-24	1 0 1	1	31.9		200**
59.7			50	S-25	1 1 1	2	22.4		200**
				VS-26					520***
54.7			55	S-27	1 1 2	3	25.4		400**
				S-28	1 2 1	3	29.4		400**
				S-29	1 1 2	3	27.0		800**
49.7			60	S-30	1 2 3	5	25.8		600**
				S-31	1 0 2	2	22.4		1000**
				S-32	1 2 1	3	26.1		1000**
44.7			65	S-33	WOH 1 2	3	24.8		1000**
				ST-34			25.5	103	200 600**
39.7			70	S-35	1 2 3	5	25.0		1000**

(E.O.D.O 10/16/2021)
Gray Silty Clay with trace sand and
gravel (continued)

Total Depth: 89.9 ft
 Drilling Date: October 15, 2021
 Inspector: MD, ET, ZL
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger;
 3-7/8 inch inside diameter cased mud-rotary

Water Level Observation:
 9-feet during drilling; groundwater level obscured due to
 drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane
 *** Vane

Excavation Backfilling Procedure:
 Cementitious grout

Figure No. 2b

Project Name: Fort Iron and Metal Company

Soil Boring No. B-02

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

CONSULTING GROUP

G2 Project No. 213688

Latitude: 42.2934902° Longitude: -83.1356920°

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 109.7 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
34.7		Gray Silty Clay with trace sand and gravel (continued) (E.O.D.O 10/18/2021)	75	VS-36					
				S-37	2 2 3	5	27.4		800**
				S-38	2 3 3	6	27.4		1000**
				S-39	2 3 3	6	28.1		1000**
29.7			80	ST-40			25.3	101	910 1000**
				S-41	2 2 4	6	28.0		1000**
24.7			85	VS-42					
				S-43	2 2 3	5	32.2		600**
				ST-44			61.1		
19.7			90	S-45	WOH 4 16	20	28.1		400**
		(Hammer Refusal Encountered @ 89.9 feet)	90.0						
		(Poor Recovery - Possible Slough)							
		End of Boring @ 89.9 ft							
14.7			95						
9.7			100						
4.7			105						

Total Depth: 89.9 ft
 Drilling Date: October 15, 2021
 Inspector: MD, ET, ZL
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger;
 3-7/8 inch inside diameter cased mud-rotary

Water Level Observation:
 9-feet during drilling; groundwater level obscured due to drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane
 *** Vane

Excavation Backfilling Procedure:
 Cementitious grout

Figure No. 2c

Project Name: Fort Iron and Metal Company

Soil Boring No. B-03

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

G2 Project No. 213688

Latitude: 42.2934537° Longitude: -83.1349926°



SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 105.1 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
		Mill Scale: Black Silty Sand with trace gravel and metal fragments (8 inches)	0.7		4				
		Fill: Brown Sandy Gravel with trace silt	1.5		4				
		Fill: Loose Dark Brown Silty Sand with trace gravel	2.5	S-01	5	9			
					4				
				S-02	2	4			
					2				
100.1		Very Loose to Loose Brown Silty Sand with trace gravel	5	S-03	3	6			
					3				
				S-04	6	12			
		Medium Compact Gray Silt with trace clay and sand	7.5		6				
			8.5		2				
95.1		Very Stiff Gray Silty Clay with trace sand and gravel	10	S-05	4	6	27.7		4000*
			10.5		2				
		(Occasional Silt Seams)		S-06	2	3	27.0		1000*
					1				
90.1		Medium Gray Silty Clay with trace sand and gravel (Occasional Silt Seams)	15	ST-07	1		30.2	97	1520
					1				
			18.5	S-08	2	3	28.9		1000*
				ST-09					500*
85.1			20	S-10	1	2	48.0		1200**
					1				
		(Casing Began to Rotate - Failed Test)		VS-11					
					WOH				
80.1			25	S-12	1	---	51.4		400**
					WOH				
		Very Soft to Soft Gray Silty Clay with trace sand and gravel		VS-13					
					WOH				
				S-14	1	2	34.0		600**
					WOH				
75.1			30	S-15	1	2	46.3		1000**
					WOH				
				ST-16			33.8	84	970
					WOH				
				S-17	1	---	45.9		600**
70.1		(E.O.D.O 10/20/2021)	35		WOH				

Total Depth: 50 ft
 Drilling Date: October 20, 2021
 Inspector: ET
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger;
 3-7/8 inch inside diameter cased mud-rotary

Water Level Observation:
 4-1/2 feet during drilling; groundwater level obscured due to drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane

Excavation Backfilling Procedure:
 Cementitious grout

Figure No. 3a

Project Name: Fort Iron and Metal Company

Soil Boring No. B-03

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

G2 Project No. 213688

Latitude: 42.2934537° Longitude: -83.1349926°



SUBSURFACE PROFILE				SOIL SAMPLE DATA					
ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 105.1 ft	DEPTH (ft)	SAMPLE TYPE-NO.	BLOWS/ 6-INCHES	STD. PEN. RESISTANCE (N)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCONF. COMP. STR. (PSF)
65.1		Very Soft to Soft Gray Silty Clay with trace sand and gravel (continued)	40	S-18	WOH 0	---	44.9		600**
					WOH 1				
				S-19	2	3	29.9		800**
					WOH 1				
				S-20	1	2	29.3		800**
				ST-21			22.5	107	680
					WOH 2				
60.1			45	S-22	1	3	24.2		1000**
					WOH 2				
				S-23	1	3	26.2		1000**
					WOH 1				
				S-24	2	3	26.0		1000**
					WOH 2				
55.1			50	S-25	2	4	25.5		800**
		(E.O.D.O 10/21/2021)	50.0						
		End of Boring @ 50 ft							
50.1			55						
45.1			60						
40.1			65						
35.1			70						

Total Depth: 50 ft
 Drilling Date: October 20, 2021
 Inspector: ET
 Contractor: Testing Engineers & Consultants, Inc.
 Driller: I. Micle

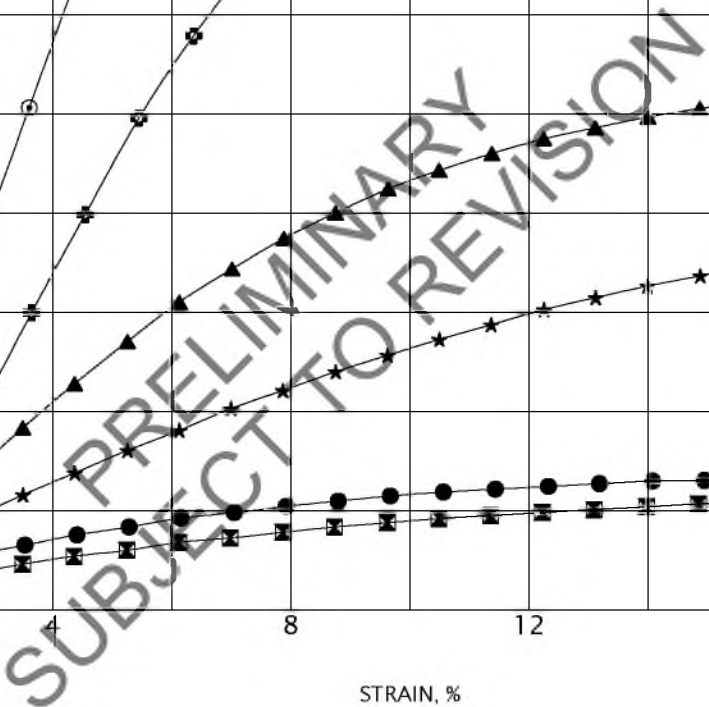
Drilling Method:
 2-1/4 inch inside diameter hollow-stem auger;
 3-7/8 inch inside diameter cased mud-rotary

Water Level Observation:
 4-1/2 feet during drilling; groundwater level obscured due to drilling method on completion

Notes:
 E.O.D.O - End of Drilling Operations
 * Calibrated Hand Penetrometer
 ** Torvane

Excavation Backfilling Procedure:
 Cementitious grout

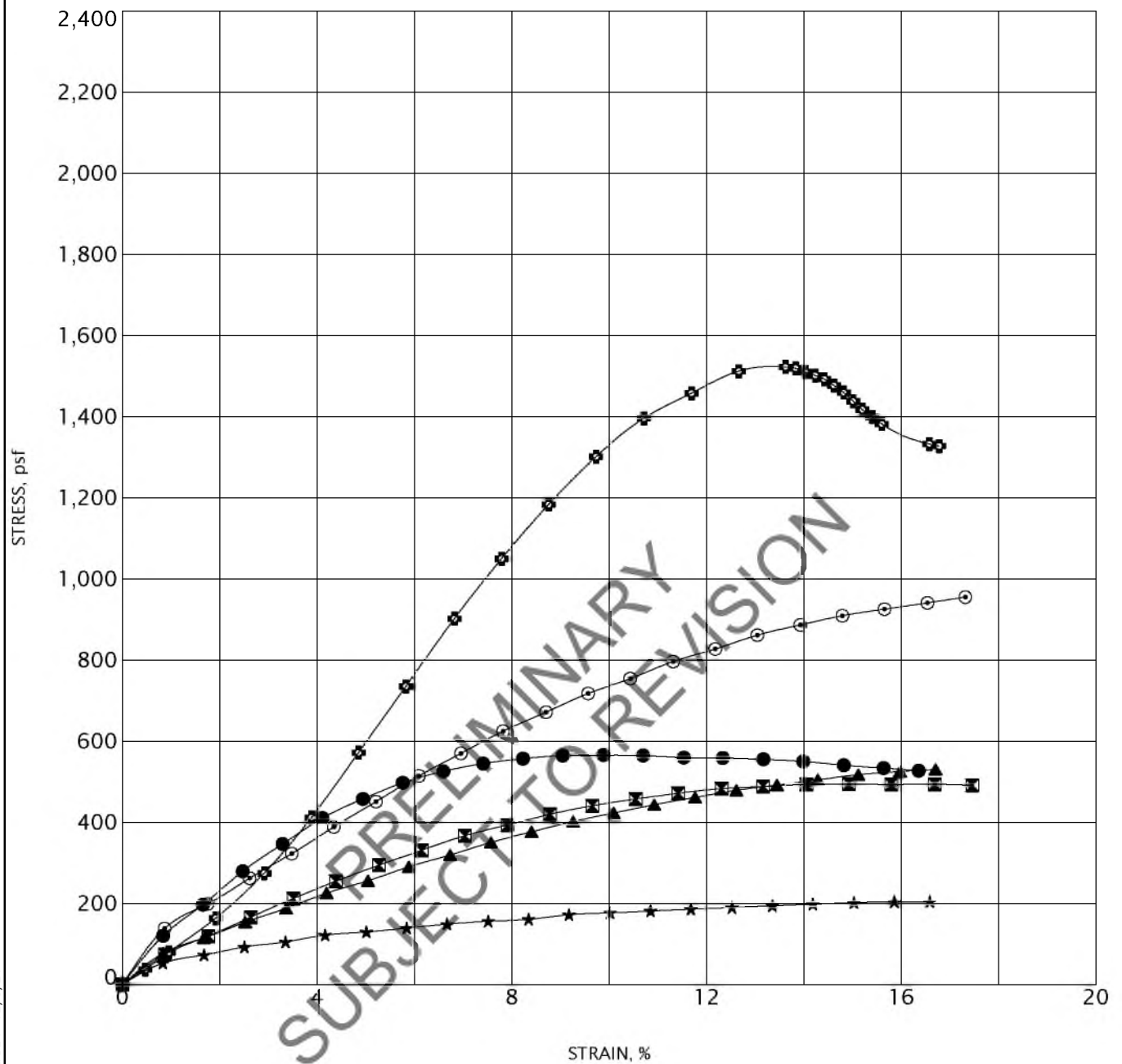
Figure No. 3b



UNCONFINED COMPRESSIVE STRENGTH TEST

G2 Project No.: 213688





Specimen	Classification	MC%	γ_d	UC
● B-02 ST-16	Gray Silty Clay	45	84	570
⊠ B-02 ST-19	Gray Silty Clay	18	104	490
▲ B-02 ST-22	Gray Silty Clay	47	89	520
★ B-02 ST-34	Gray Silty Clay	26	103	200
⊙ B-02 ST-40	Gray Silty Clay	25	101	910
⊞ B-03 ST-07	Gray Silty Clay	30	97	1520

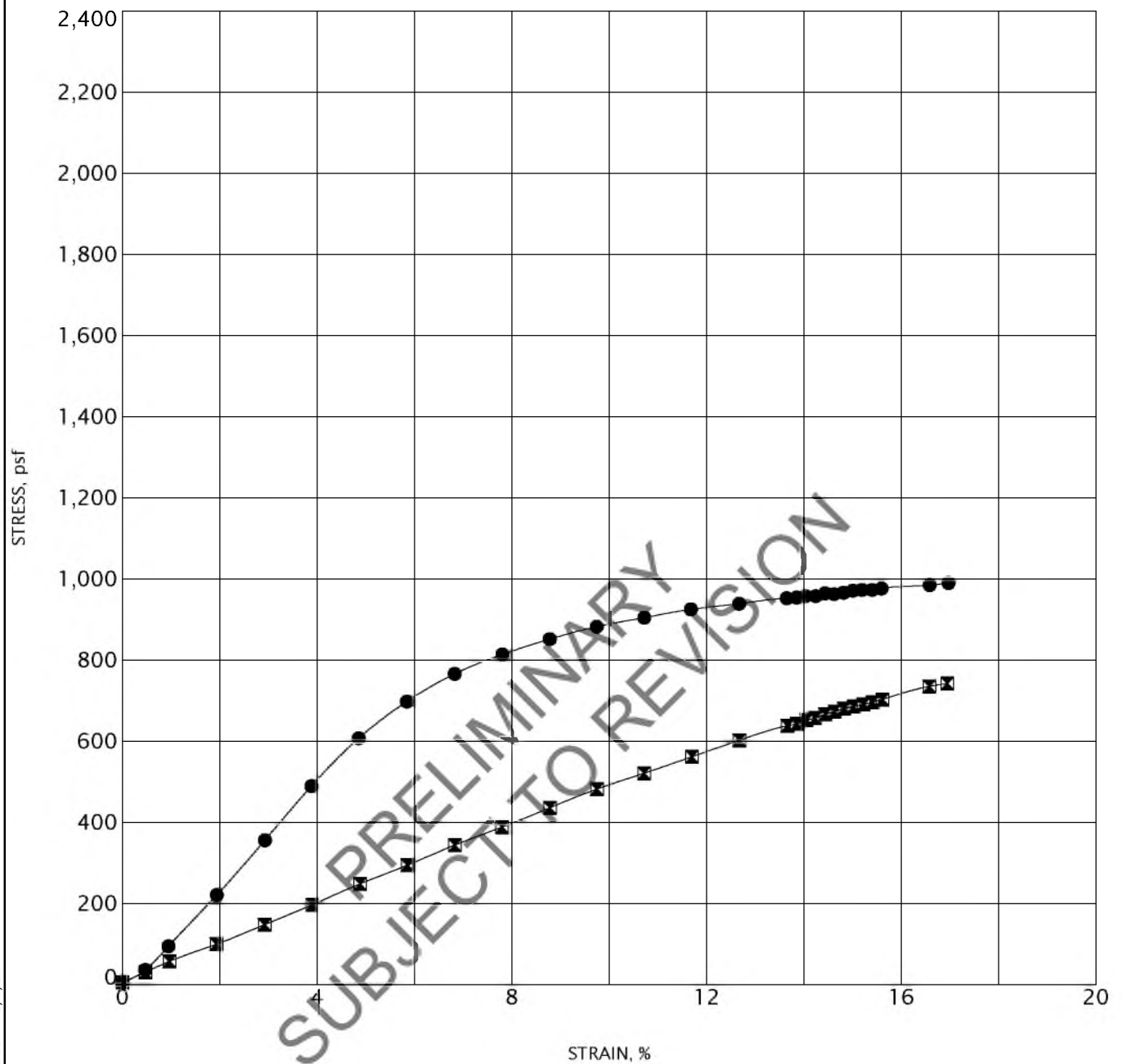
UNCONFINED COMPRESSIVE STRENGTH TEST

Project Name: Fort Iron and Metal Company
 Project Location: 9607 Dearborn Street
 Detroit, Wayne County, Michigan

G2 Project No.: 213688

Figure No. 5





Specimen	Classification	MC%	γ_d	UC
● B-03 ST-16	Gray Silty Clay	34	84	970
■ B-03 ST-21	Gray Silty Clay	23	107	680

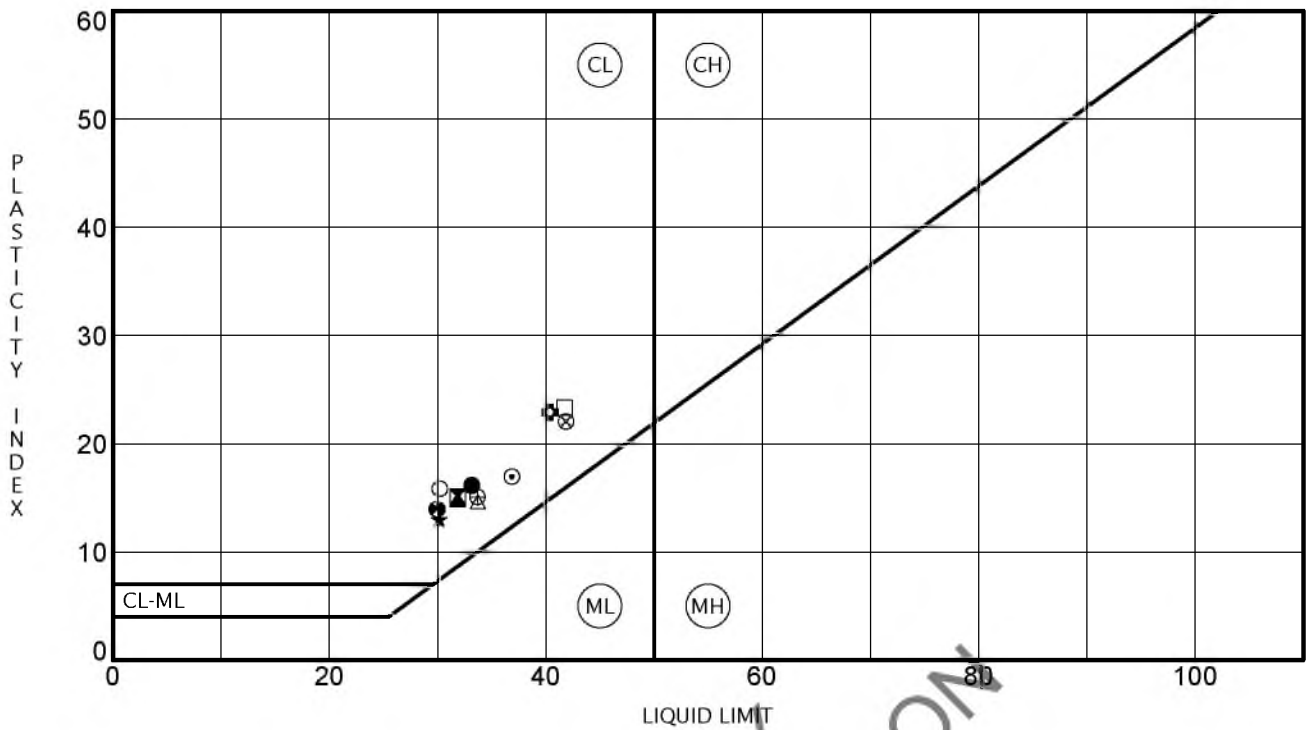


UNCONFINED COMPRESSIVE STRENGTH TEST

Project Name: Fort Iron and Metal Company
 Project Location: 9607 Dearborn Street
 Detroit, Wayne County, Michigan

G2 Project No.: 213688

Figure No. 6



Specimen Identification	LL	PL	PI	Fines	M %	Classification
● B-01 ST-19	33	17	16		31	Gray Silty Clay
☒ B-01 ST-40	32	17	15		24	Gray Silty Clay
▲ B-02 ST-10	32	17	15		28	Gray Silty Clay
★ B-02 ST-12	30	17	13		29	Gray Silty Clay
⊙ B-02 ST-19	37	20	17		18	Gray Silty Clay
⊕ B-02 ST-22	40	17	23		47	Gray Silty Clay
○ B-02 ST-34	30	14	16		26	Gray Silty Clay
△ B-02 ST-40	34	19	15		25	Gray Silty Clay
⊗ B-02 ST-44	42	20	22		61	Gray Silty Clay
⊕ B-03 ST-07	34	19	15		30	Gray Silty Clay
□ B-03 ST-16	42	18	24		34	Gray Silty Clay
⊙ B-03 ST-21	30	16	14		23	Gray Silty Clay



ATTERBERG LIMITS RESULTS

Project Name: Fort Iron and Metal Company

Project Location: 9607 Dearborn Street
Detroit, Wayne County, Michigan

G2 Project No.: 213688

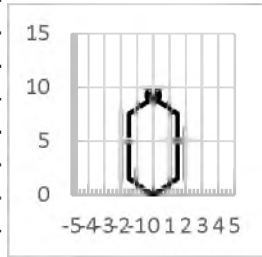
Figure No. 7

ASTM D2573**D35 - In-Situ Field Vane Shear**

Project Name: Fort Iron & Metal Job No.: 213688
 Location of Project: Detroit, MI Soil Boring ID: B-01 Borehole Elev., ft: 591
 Tested By: C. SaintCyr, P.E. Borehole Dia., in: 3.875 Date: 10/12/2021
 Checked By: M. Dagher, P.E. Date of Test: 10/8/2021

Vane Dimensions

Type of Vane: Double Tapered
 Height, in: 9
 Vane Width, in: 1.5
 Vane Dia., in: 2.5
 Taper Height, in: 1.5
 Rod Dia., in: 0.75
 Blade Thickness, in: 0.06
 Void Area Ratio (V_A), %: 13.3
 Vane Top Angle (i_T), °: 45
 Vane Bottom Angle (i_B), °: 45

**Test Information**

Test No.: 1
 Depth of Vane Tip, ft: 46
 Vane Penetration Time, min: ---
 Vane Penetration, ft: 2
 Vane Rotation Delay, min: ---
 Soil Failure Time (Intact), min: ---
 Friction from Slip Couplings, in-lb: ---
 Blank Rod Friction Test, in-lb: ---

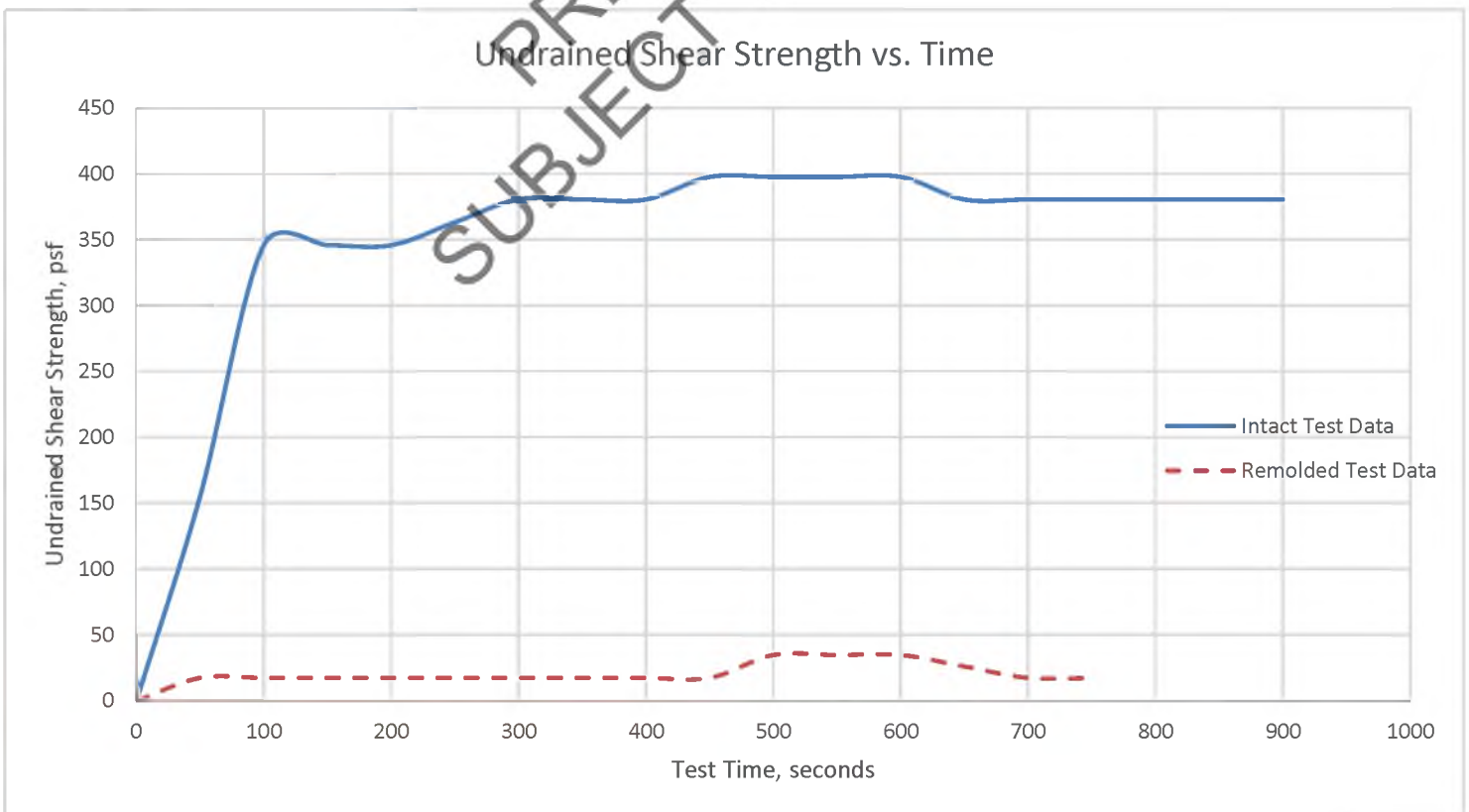
Intact Test Results

Maximum Torque Reading, in-lb: 276
 Rate of Shearing, deg/sec: 0.1
 Peak Undrained Shear Strength, psf: 398

Remolded Test Results

Maximum Torque Reading, in-lb: 24
 No. of Remolded Revolutions: 5
 Rate of Remolding, deg/sec: 0.1
 Remolded Undrained Shear Strength, psf: 35

Sensitivity



ASTM D2573**D35 - In-Situ Field Vane Shear**

Project Name: Fort Iron & Metal Job No.: 213688

Location of Project: Detroit, MI Soil Boring ID: 0 Borehole Elev., ft: 0

Tested By: C. SaintCyr Borehole Dia., in: 3.875 Date: 10/12/2021

Checked By: M. Dagher, P.E. Date of Test: 10/9/2021

Vane Dimensions

Type of Vane: Double Tapered

Height, in: 9

Vane Width, in: 1.5

Vane Dia., in: 2.5

Taper Height, in: 1.5

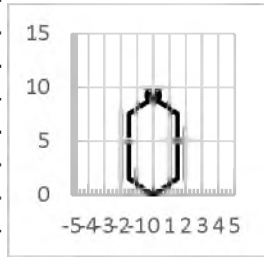
Rod Dia., in: 0.75

Blade Thickness, in: 0.06

Void Area Ratio (V_A), %: 13.3

Vane Top Angle (i_T), °: 45

Vane Bottom Angle (i_B), °: 45

**Test Information**

Test No.: 2

Depth of Vane Tip, ft: 70

Vane Penetration Time, min: ---

Vane Penetration, ft: 2

Vane Rotation Delay, min: ---

Soil Failure Time (Intact), min: ---

Friction from Slip Couplings, in-lb: ---

Blank Rod Friction Test, in-lb: ---

Intact Test Results

Maximum Torque Reading, in-lb: 804

Rate of Shearing, deg/sec: 0.1

Peak Undrained Shear Strength, psf: 1159

Remolded Test Results

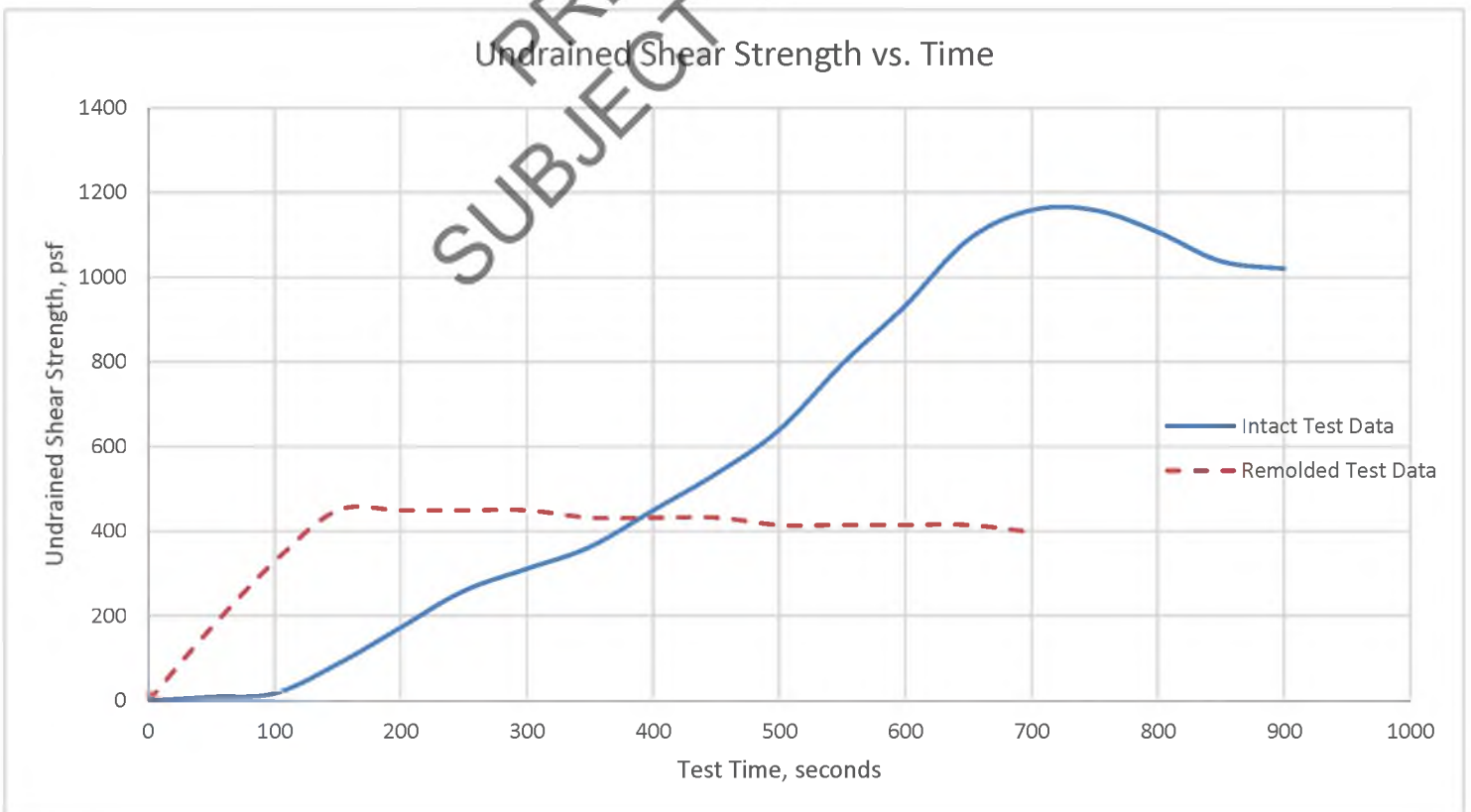
Maximum Torque Reading, in-lb: 312

No. of Remolded Revolutions: 5

Rate of Remolding, deg/sec: 0.1

Remolded Undrained Shear Strength, psf: 450

Sensitivity



ASTM D2573**D35 - In-Situ Field Vane Shear**

Project Name: Fort Iron & Metal Job No.: 213688

Location of Project: Detroit, MI Soil Boring ID: B-02 Borehole Elev., ft: 0

Tested By: C. SaintCyr Borehole Dia., in: 3.875 Date: 10/12/2021

Checked By: M. Dagher, P.E. Date of Test: 10/9/2021

Vane Dimensions

Type of Vane: Double Tapered

Height, in: 9

Vane Width, in: 1.5

Vane Dia., in: 2.5

Taper Height, in: 1.5

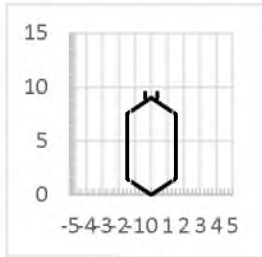
Rod Dia., in: 0.75

Blade Thickness, in: 0.06

Void Area Ratio (V_A), %: 13.3

Vane Top Angle (i_T), °: 45

Vane Bottom Angle (i_B), °: 45

**Test Information**

Test No.: 0

Depth of Vane Tip, ft: 72

Vane Penetration Time, min: 0

Vane Penetration, ft: 0

Vane Rotation Delay, min: 0

Soil Failure Time (Intact), min: 0

Friction from Slip Couplings, in-lb: ---

Blank Rod Friction Test, in-lb: ---

Intact Test Results

Maximum Torque Reading, in-lb: 384

Rate of Shearing, deg/sec: 0.1

Peak Undrained Shear Strength, psf: 553

Remolded Test Results

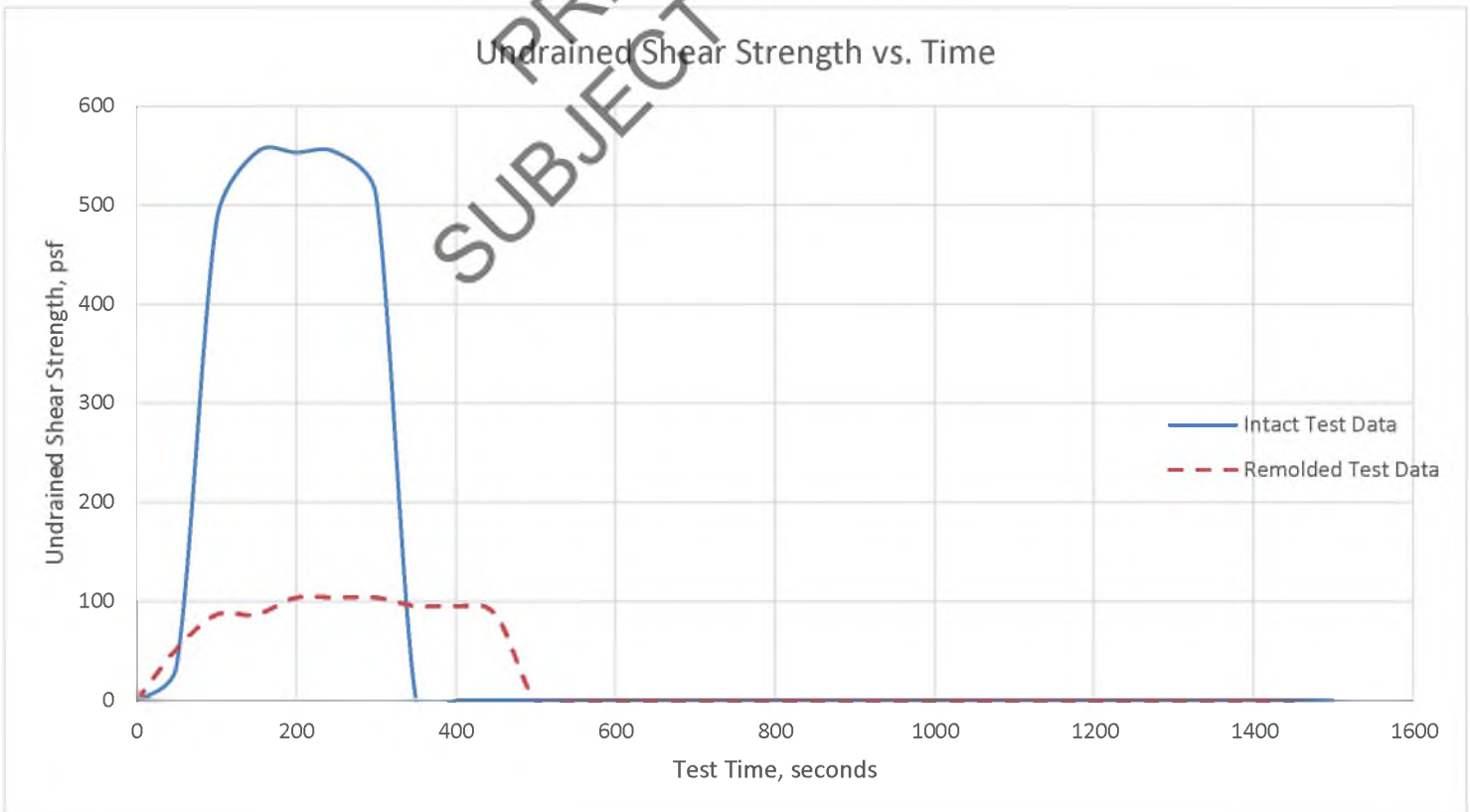
Maximum Torque Reading, in-lb: 72

No. of Remolded Revolutions: 5

Rate of Remolding, deg/sec: 0.1

Remolded Undrained Shear Strength, psf: 104

Sensitivity



ASTM D2573**D35 - In-Situ Field Vane Shear**

Project Name: Fort Iron & Metal Job No.: 213688

Location of Project: Detroit, MI Soil Boring ID: 0 Borehole Elev., ft: 0

Tested By: C. SaintCyr Borehole Dia., in: 3.875 Date: 10/12/2021

Checked By: M. Dagher, P.E. Date of Test: 10/9/2021

Vane Dimensions

Type of Vane: Double Tapered

Height, in: 9

Vane Width, in: 1.5

Vane Dia., in: 2.5

Taper Height, in: 1.5

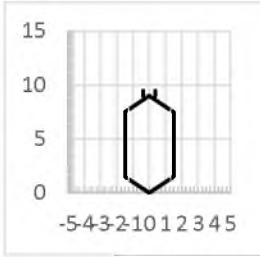
Rod Dia., in: 0.75

Blade Thickness, in: 0.06

Void Area Ratio (V_A), %: 13.3

Vane Top Angle (i_T), °: 45

Vane Bottom Angle (i_B), °: 45

**Test Information**

Test No.: 0

Depth of Vane Tip, ft: 0

Vane Penetration Time, min: 0

Vane Penetration, ft: 0

Vane Rotation Delay, min: 0

Soil Failure Time (Intact), min: 0

Friction from Slip Couplings, in-lb: ---

Blank Rod Friction Test, in-lb: ---

Intact Test Results

Maximum Torque Reading, in-lb: 744

Rate of Shearing, deg/sec: 0.1

Peak Undrained Shear Strength, psf: 1072

Remolded Test Results

Maximum Torque Reading, in-lb: 0

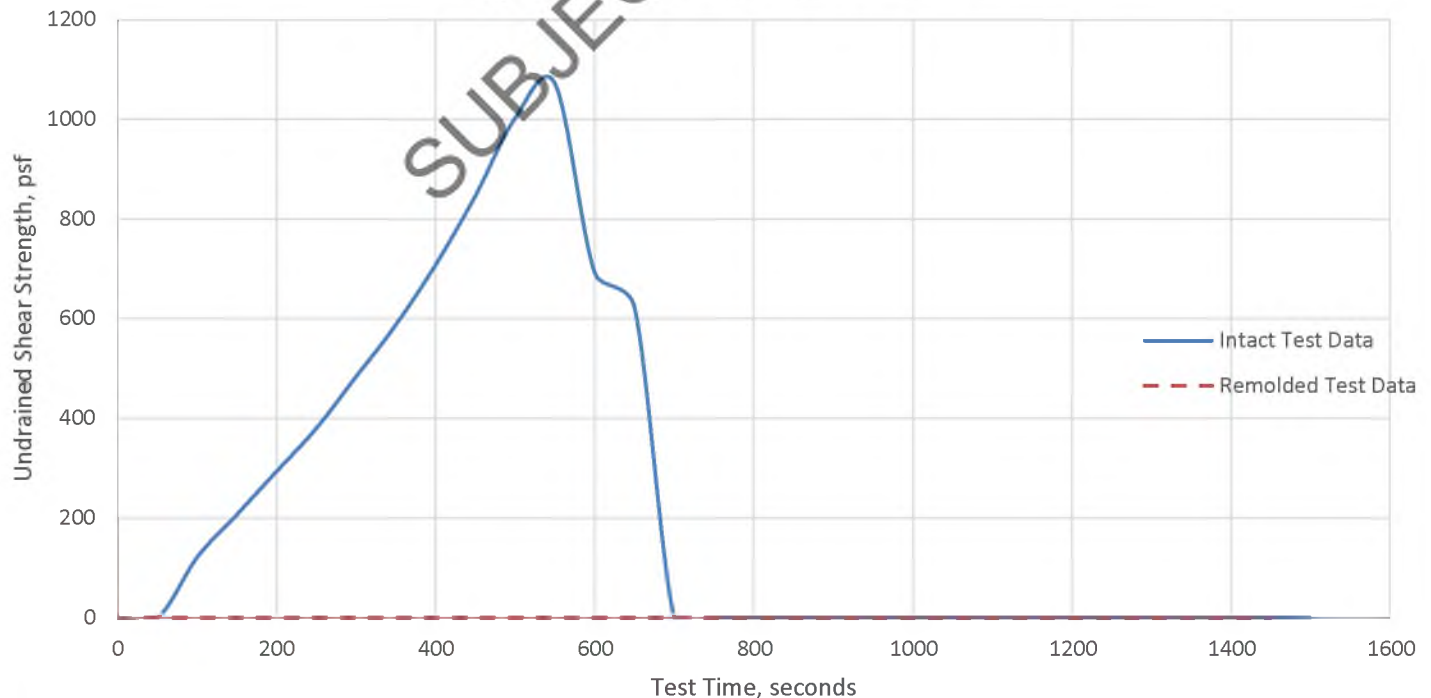
No. of Remolded Revolutions: 5

Rate of Remolding, deg/sec: #DIV/0!

Remolded Undrained Shear Strength, psf: 0

Sensitivity

#DIV/0!

Undrained Shear Strength vs. Time

ASTM D2573**D35 - In-Situ Field Vane Shear**

Project Name: Fort Iron & Metal Job No.: 213688

Location of Project: Detroit, MI Soil Boring ID: B-02 Borehole Elev., ft: 0

Tested By: C. SaintCyr Borehole Dia., in: 3.875 Date: 10/12/2021

Checked By: M. Dagher, P.E. Date of Test: 10/9/2021

Vane Dimensions

Type of Vane: Double Tapered

Height, in: 9

Vane Width, in: 1.5

Vane Dia., in: 2.5

Taper Height, in: 1.5

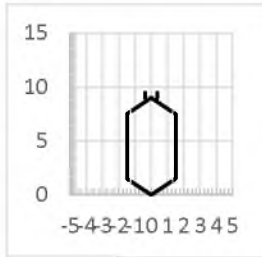
Rod Dia., in: 0.75

Blade Thickness, in: 0.06

Void Area Ratio (V_A), %: 13.3

Vane Top Angle (i_T), °: 45

Vane Bottom Angle (i_B), °: 45

**Test Information**

Test No.: 0

Depth of Vane Tip, ft: 72

Vane Penetration Time, min: 0

Vane Penetration, ft: 0

Vane Rotation Delay, min: 0

Soil Failure Time (Intact), min: 0

Friction from Slip Couplings, in-lb: ---

Blank Rod Friction Test, in-lb: ---

Intact Test Results

Maximum Torque Reading, in-lb: 345

Rate of Shearing, deg/sec: 0.1

Peak Undrained Shear Strength, psf: 497

Remolded Test Results

Maximum Torque Reading, in-lb: 0

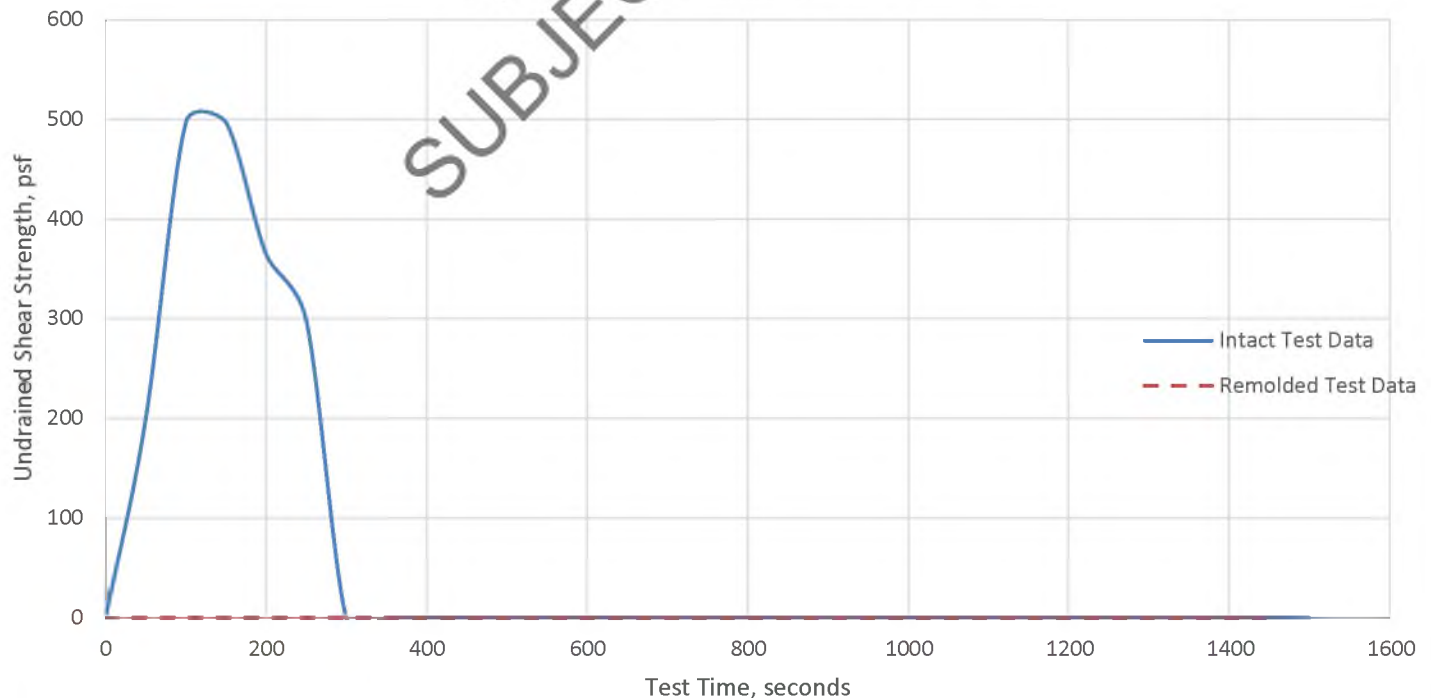
No. of Remolded Revolutions: 5

Rate of Remolding, deg/sec: #DIV/0!

Remolded Undrained Shear Strength, psf: 0

Sensitivity

#DIV/0!

Undrained Shear Strength vs. Time

2. Prism monitoring data

Fort Iron and Metal - Prism Monitoring

#	Baseline					Difference from Baseline (Current - Baseline)														
	Date (Horz.)	Date (Vert.)	Northing	Easting	Elevation	9/21/2021			9/23/2021			9/24/2021 - A			9/24/2021 - B			9/25/2021		
						Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	9/21/2021	9/24/2021	291472.582	13455967.065	109.189	0.000	0.000	-0.003	-0.003	0.008	-0.003	0.013	-0.013	0.000	0.013	-0.008	-0.007	0.000	0.000	-0.007
301	9/21/2021	9/21/2021	291640.597	13456414.771	112.015	0.000	0.000	0.000	0.006	0.009	-0.007	0.001	-0.020	-0.007	-0.002	-0.021	-0.003	-0.001	-0.005	-0.014
302	9/21/2021	9/21/2021	291651.301	13456381.161	113.309	0.000	0.000	0.000	0.006	0.012	-0.011	-0.007	-0.022	-0.009	-0.005	-0.033	-0.006	-0.001	0.000	-0.015
303	9/21/2021	9/24/2021	291511.432	13456041.754	112.336	0.000	0.000	0.001	-0.003	0.004	-0.002	0.008	-0.013	0.000	0.007	-0.011	-0.003	-0.002	0.000	-0.006
304	9/21/2021	9/24/2021	291534.900	13456105.399	115.510	0.000	0.000	-0.001	0.003	0.004	0.001	0.007	-0.010	0.000	0.007	-0.010	-0.001	0.000	0.003	-0.002
305	9/21/2021	9/24/2021	291589.697	13456187.791	113.435	0.000	0.000	0.001	0.003	0.004	0.001	0.000	-0.010	0.000	0.000	-0.005	-0.001	-0.001	0.002	-0.003
306	9/21/2021	9/24/2021	291709.684	13456183.423	111.901	0.000	0.000	0.000	0.005	0.002	0.005	0.000	0.000	0.000	0.002	0.001	-0.001	0.000	0.000	-0.001
307	9/21/2021	9/24/2021	291632.091	13456226.512	112.829	0.000	0.000	0.005	0.006	0.000	0.006	0.002	-0.006	0.000	0.003	0.003	0.003	0.005	0.007	-0.001
308	9/23/2021	9/24/2021	291625.068	13456260.427	113.755	-	-	-	0.000	0.000	0.001	-0.017	-0.011	0.000	-0.019	-0.003	0.000	-0.007	-0.007	-0.007
309	9/23/2021	9/24/2021	291635.191	13456339.350	117.761	-	-	-	0.000	0.000	0.007	-0.022	-0.014	0.000	-0.016	-0.009	0.003	-0.013	0.005	-0.003
310	9/25/2021	9/25/2021	291627.896	13456430.706	119.606	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.000	0.000
311	9/23/2021	9/24/2021	291631.954	13456384.973	119.831	-	-	-	0.000	0.000	0.005	-0.021	-0.010	0.000	-0.014	-0.006	0.004	-0.004	0.006	-0.004
312	9/23/2021	9/24/2021	291621.881	13456401.330	116.554	-	-	-	0.000	0.000	0.004	-0.026	-0.008	0.000	-0.014	-0.007	0.004	-0.025	-0.001	-0.008
313	9/23/2021	9/25/2021	291618.603	13456446.881	116.113	-	-	-	0.000	0.000	0.010	-	-	-	-	-	-	-0.018	-0.006	0.000
314	9/24/2021	9/24/2021	291671.182	13456479.820	112.611	-	-	-	-	-	-	0.000	0.000	0.000	0.008	0.001	0.005	0.003	0.003	-0.009
315	9/24/2021	9/24/2021	291477.167	13456279.277	116.793	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-	0.003	-0.008	-0.002
316	9/24/2021	9/24/2021	291398.897	13456250.194	111.268	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-	0.002	-0.007	-0.004
317	9/24/2021	9/24/2021	291420.168	13456290.702	111.228	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-	0.004	-0.010	-0.004
318	9/24/2021	9/24/2021	291406.084	13456344.638	111.557	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-	-0.008	-0.017	0.000
319	9/29/2021	9/29/2021	291623.076	13456367.173	116.307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	9/29/2021	9/29/2021	291345.457	13456373.582	108.605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
321	9/29/2021	9/29/2021	291349.809	13456327.262	108.610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
322	9/29/2021	9/29/2021	291341.805	13456409.936	108.480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
323	12/7/2021	12/7/2021	291345.677	13456365.759	108.575	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	12/15/2021	12/15/2021	291343.402	13456379.518	108.663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	12/15/2021	12/15/2021	291351.673	13456290.169	108.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
9/29/2021 Utility poles with #309, #310, #311 were removed.
9/30/2021 #301 & #302, locted in heaved part of Dearborn St. are gone due to demolition.
12/6/2021 #320 was removed and #323 set as a replacement

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	9/26/2021 - A			9/26/2021 - B			9/27/2021 - A			9/27/2021 - B			9/28/2021 - A			9/28/2021 - B			9/29/2021 - A		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	-0.007	0.008	0.007	0.012	-0.007	0.008	0.005	-0.003	-0.010	0.013	-0.010	-0.005	-	-	-	0.010	-0.009	-0.018	-	-	-
301	-0.002	-0.013	-0.017	-0.003	-0.016	-0.018	-	-	-	-	-	-	-	-	-	-	-	-	-0.028	-0.017	-0.058
302	-0.008	-0.014	-0.018	-0.003	-0.017	-0.019	-	-	-	-	-	-	-	-	-	-	-	-	-0.030	-0.027	-0.074
303	-0.003	0.003	0.009	0.009	-0.010	0.009	0.005	-0.007	-0.003	0.008	-0.009	-0.003	0.001	-0.004	-0.006	0.006	-0.010	-0.007	0.003	-0.009	-0.004
304	0.000	0.004	0.009	0.009	-0.008	0.010	0.003	-0.002	-0.005	0.006	-0.007	0.001	0.002	0.001	-0.008	0.004	-0.004	-0.009	-	-	-
305	-0.004	0.004	0.011	0.001	-0.004	0.011	-0.001	0.000	-0.006	-0.001	-0.001	-0.007	-0.003	0.001	-0.005	-0.001	0.001	-0.006	-0.002	-0.002	-0.006
306	-0.001	0.000	0.012	0.001	0.000	0.009	-0.001	-0.001	-0.004	0.013	0.023	-0.004	-0.001	0.002	-0.003	0.001	0.002	-0.002	0.001	0.002	-0.002
307	-0.001	-0.001	0.009	0.003	-0.002	0.012	-0.001	-0.001	-0.004	0.001	0.001	-0.006	-0.003	0.005	-0.004	0.001	0.006	-0.004	-0.003	0.000	-0.004
308	-0.016	0.002	0.008	-0.015	-0.001	0.007	-0.018	0.002	-0.010	-0.020	0.004	-0.013	-	-	-	-	-	-	-	-	-
309	-0.026	0.002	0.005	-0.027	-0.041	0.004	-0.037	-0.058	-0.022	-0.034	-0.060	-0.022	-0.047	-0.053	-0.030	-0.049	-0.054	-0.042	-0.060	-0.048	-0.046
310	-	-	-	-	-	-	-0.001	-0.040	-0.016	0.004	-0.040	-0.018	-0.009	-0.040	-0.027	0.000	-0.037	-0.039	-0.020	-0.043	-0.037
311	-0.019	0.003	0.003	-0.023	-0.014	0.002	-0.035	-0.024	-0.026	-0.041	0.002	-0.024	-0.038	-0.020	-0.033	-0.040	-0.019	-0.043	-0.051	-0.019	-0.049
312	-0.023	0.001	0.000	-0.027	0.008	-0.002	-0.032	0.005	-0.028	-0.035	-0.004	-0.032	-0.061	0.003	-0.038	-0.057	0.003	-0.049	-0.062	0.009	-0.044
313	-	-	-	-	-	-	-0.027	-0.007	-0.013	-0.024	0.002	-0.022	-0.046	0.001	-0.039	-0.028	0.006	-0.043	-0.039	0.000	-0.044
314	0.013	0.004	0.007	0.007	-0.002	0.009	0.001	-0.005	-0.010	-0.002	-0.008	-0.011	-0.015	0.000	-0.009	-0.003	-0.001	-0.010	-0.009	0.003	-0.005
315	-0.005	0.020	-0.012	-0.007	0.012	-0.004	-	-	-	-0.025	0.025	-0.047	-0.017	0.035	-0.047	-0.019	0.029	-0.048	-0.017	0.035	-0.064
316	0.004	-0.002	-0.003	0.003	-0.003	-0.008	0.002	-0.003	-0.015	0.002	-0.003	-0.015	0.006	0.001	-0.009	0.001	-0.003	-0.012	0.000	0.000	-0.019
317	0.004	-0.003	-0.006	0.005	-0.005	-0.001	0.007	-0.004	-0.018	0.008	-0.005	-0.017	0.011	-0.001	-0.013	0.008	-0.004	-0.017	0.008	-0.001	-0.024
318	0.004	-0.006	-0.007	0.004	-0.005	-0.002	0.008	-0.008	-0.020	0.007	-0.009	-0.021	0.012	-0.002	-0.020	0.011	-0.007	-0.021	0.012	-0.007	-0.029
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.000	0.000
320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	9/29/2021 - B			9/30/2021 - A			9/30/2021 - B			10/01/2021 - A			10/01/2021 - B			10/2/2021			10/04/2021 - A		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	-	-	-	-0.027	0.027	0.001	0.007	-0.002	0.001	-	-	-	0.010	-0.011	-0.001	-0.008	0.009	0.004	0.014	-0.014	-0.002
301	-0.026	0.004	-0.060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-0.052	-0.029	-0.070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	0.015	-0.021	-0.004	-0.028	0.027	-0.003	0.006	-0.002	0.003	0.003	-0.004	-0.005	0.003	-0.007	-0.005	-0.008	0.008	0.002	0.009	-0.013	-0.004
304	-	-	-	-0.021	0.035	-0.001	0.006	0.001	0.002	0.007	-0.006	-0.006	0.005	-0.006	-0.004	-0.003	0.009	0.003	0.007	-0.004	-0.007
305	-0.001	-0.013	-0.004	-0.018	0.026	-0.007	0.002	0.002	-0.001	-0.001	-0.004	-0.006	-0.002	-0.001	-0.008	-0.005	0.011	-0.001	-0.001	-0.001	-0.008
306	0.003	0.003	-0.001	-0.015	0.016	-0.004	0.005	0.003	0.000	0.002	0.002	-0.005	0.003	-0.002	-0.006	-0.010	0.007	0.002	-0.001	-0.001	-0.007
307	-0.003	0.000	-0.003	-0.014	0.028	-0.008	0.003	0.006	0.000	-0.002	-0.001	-0.005	0.000	0.002	-0.009	-0.006	0.012	-0.004	-0.003	0.002	-0.010
308	-	-	-	-	-	-	-	-	-	-0.005	0.007	-0.025	-0.005	0.011	-0.023	-0.006	0.021	-0.020	-0.001	0.012	-0.029
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-0.071	-0.007	-0.046	-0.051	0.030	-0.048	-0.056	0.013	-0.043	-0.067	0.006	-0.046	-0.047	0.015	-0.046	-0.045	0.019	-0.037	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.026	-0.046	-	-	-
314	-0.025	0.059	-0.005	0.012	0.085	-0.012	0.013	0.066	0.000	-0.014	0.064	-0.013	0.010	0.064	-0.012	0.008	0.072	-0.003	0.009	0.066	-0.010
315	-0.018	0.038	-0.059	-0.021	0.038	-0.061	-	-	-	-0.021	0.034	-0.056	-0.019	0.032	-0.058	-0.002	0.059	-0.001	-0.012	0.038	-0.065
316	0.001	-0.001	-0.012	0.002	-0.001	-0.005	-	-	-	0.003	-0.001	-0.005	0.000	-0.001	-0.009	0.006	0.011	-0.020	0.002	0.001	-0.001
317	0.007	-0.004	-0.015	0.008	-0.003	-0.010	-	-	-	0.009	-0.004	-0.009	0.008	-0.004	-0.013	0.008	0.009	-0.027	0.012	-0.001	-0.010
318	0.009	-0.008	-0.021	0.009	-0.006	-0.015	-	-	-	0.010	-0.008	-0.013	0.014	-0.009	-0.018	0.011	0.001	-0.031	0.018	-0.008	-0.014
319	-0.004	0.003	-0.001	0.012	0.030	-0.002	0.030	0.012	0.000	0.097	-0.005	0.008	0.069	-0.010	-0.006	-	-	-	0.117	-0.006	0.008
320	-	-	-	0.000	0.000	0.000	-	-	-	0.002	0.001	-0.017	0.001	0.001	0.006	-	-	-	0.004	0.006	-0.012
321	-	-	-	0.000	0.000	0.000	-	-	-	-0.004	0.005	-0.006	-0.001	0.001	0.002	-	-	-	-0.001	0.009	-0.005
322	-	-	-	0.000	0.000	0.000	-	-	-	0.003	-0.001	-0.010	0.001	-0.001	-0.010	-	-	-	0.010	0.015	-0.010
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	10/04/2021 - B			10/05/2021 - A			10/05/2021 - B			10/06/2021 - A			10/06/2021 - B			10/07/2021 - A			10/07/2021 - B		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	0.015	-0.012	0.003	0.009	-0.011	-0.001	0.013	-0.015	-0.002	0.011	-0.011	-0.005	0.010	-0.010	0.002	0.003	-0.001	-0.006	0.013	-0.010	-0.006
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	0.009	-0.012	0.001	0.007	-0.011	-0.002	0.009	-0.013	-0.003	0.009	-0.012	0.001	0.003	-0.007	0.000	-	-	-	-	-	-
304	0.007	-0.004	0.000	0.007	-0.004	-0.004	0.007	-0.004	-0.001	0.006	0.000	0.003	0.003	0.000	-0.001	-	-	-	0.008	-0.006	-0.006
305	-	-	-	-0.001	-0.002	-0.003	-0.001	-0.001	-0.004	-0.001	0.002	-0.002	-0.003	0.002	-0.003	-0.003	0.009	-0.007	-0.001	0.004	-0.006
306	-0.001	0.000	-0.002	-0.001	0.000	-0.001	0.002	-0.002	-0.003	0.000	0.001	-0.001	-0.004	0.003	0.000	0.001	0.003	-0.003	-0.003	0.004	-0.001
307	-0.004	0.003	-0.001	-0.004	0.003	-0.005	-	-	-	-0.003	0.004	-0.003	-0.006	0.008	-0.004	0.026	0.004	-0.005	-0.003	0.008	-0.011
308	-0.002	0.013	-0.021	-0.001	0.009	-0.025	-0.003	0.011	-0.024	-0.001	0.014	-0.024	-0.009	0.017	-0.024	0.014	0.007	-0.029	-0.012	0.023	-0.029
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-0.039	0.016	-0.037	-0.037	0.014	-0.036	-0.035	0.011	-0.039	-0.036	0.017	-0.039	-0.031	0.019	-0.040	-0.023	-0.001	-0.043	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	0.012	0.065	-0.002	0.004	0.067	-0.001	0.012	0.065	-0.006	0.007	0.070	-0.004	0.008	0.069	-0.002	-	-	-	0.012	0.068	-0.007
315	-0.016	0.045	-0.067	-0.011	0.037	-0.069	-0.012	0.041	-0.070	-0.017	0.043	-0.069	-0.016	0.041	-0.075	-	-	-	-	-	-
316	0.002	0.004	-0.006	0.001	0.000	-0.004	-0.001	0.004	-0.005	0.002	0.003	-0.006	0.004	0.002	-0.008	-	-	-	-	-	-
317	0.010	0.001	-0.011	0.011	-0.004	-0.011	0.011	0.000	-0.011	0.012	0.000	-0.011	0.013	-0.001	-0.016	-	-	-	-	-	-
318	0.012	-0.005	-0.015	0.017	-0.009	-0.015	0.018	-0.005	-0.016	0.016	-0.006	-0.017	0.016	-0.007	-0.021	-	-	-	-	-	-
319	0.119	-0.007	0.014	0.115	-0.006	0.013	-	-	-	-	-	-	0.118	-0.001	0.009	0.132	-0.026	0.009	0.118	-0.002	0.009
320	0.001	0.006	-0.003	0.003	0.006	-0.003	-	-	-	-	-	-	0.000	0.011	-0.007	-	-	-	-	-	-
321	-0.001	0.010	-0.001	0.001	0.011	-0.002	-	-	-	-	-	-	0.000	0.010	-0.006	-	-	-	-	-	-
322	0.011	0.017	-0.015	0.013	0.018	-0.015	-	-	-	-	-	-	0.013	0.018	-0.018	-	-	-	-	-	-
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	10/8/2021			10/09/2021 - A			10/11/2021 - A			10/11/2021 - B			10/12/2021 - A			10/12/2021 - B			10/13/2021 - A		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	0.016	-0.014	0.005	0.022	-0.017	-0.006	0.014	-0.010	0.000	0.018	-0.012	0.001	0.016	-0.011	0.000	0.011	-0.010	0.004	-0.003	0.005	0.007
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	0.009	-0.009	0.004	0.018	-0.013	-0.006	0.010	-0.008	0.004	0.013	-0.009	0.000	0.010	-0.005	0.000	0.009	-0.007	0.006	0.008	-0.009	0.001
304	0.010	-0.006	0.003	0.014	-0.003	-0.006	0.011	-0.004	-0.002	0.012	-0.007	0.001	0.010	0.001	-0.003	0.009	-0.004	0.001	0.009	-0.003	0.000
305	0.001	0.002	0.000	0.003	-0.002	-0.009	0.003	0.002	-0.004	0.004	0.002	-0.004	-	-	-	0.002	0.003	-0.002	0.001	0.001	-0.004
306	-0.003	0.003	0.003	0.003	0.007	-0.005	0.001	0.000	-0.001	0.004	0.000	-0.001	0.003	0.003	0.000	0.001	0.001	-0.003	0.001	0.000	-0.001
307	-	-	-	-0.002	0.001	-0.012	-	-	-	-	-	-	-0.003	0.006	-0.008	0.023	-0.003	-0.008	-0.003	0.003	-0.007
308	-0.004	0.014	-0.024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	-	-	-	-	-	-	0.013	0.067	-0.001	-	-	-	-	-	-	0.015	0.065	-0.012	-	-	-
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	0.008	-0.009
317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.013	0.005	-0.017
318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.014	-0.003	-0.024
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-	-	-	-	-	-	-	-	-	0.001	0.002	-0.007	0.000	0.006	-0.005	-	-	-	0.000	0.007	-0.005
321	-	-	-	-	-	-	-	-	-	0.003	0.004	-0.007	-0.001	0.008	0.001	-	-	-	0.001	0.009	-0.002
322	-	-	-	-	-	-	-	-	-	0.003	-0.001	-0.021	0.004	0.001	-0.015	-	-	-	0.003	0.003	-0.017
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	10/13/2021 - B			10/14/2021 - A			10/14/2021 - B			10/15/2021 - A			10/15/2021 - B			10/16/2021			10/18/2021 - A		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	0.013	-0.011	0.008	0.015	-0.017	-0.009	0.023	-0.014	0.005	0.008	-0.005	0.019	0.006	-0.003	0.022	0.000	0.000	-0.007	-	-	-
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	0.006	-0.007	0.005	0.012	-0.015	-0.009	0.014	-0.009	-0.005	0.004	-0.005	0.016	0.005	-0.003	0.018	-0.002	0.000	-0.006	0.006	-0.009	0.004
304	0.006	-0.002	0.003	0.009	-0.007	-0.008	0.013	-0.005	-0.002	0.008	0.001	0.013	0.008	0.003	0.015	0.000	0.003	-0.002	0.010	0.002	-0.001
305	0.001	0.000	0.000	0.000	-0.001	-0.009	0.004	0.003	-0.003	-0.002	0.007	0.004	0.001	0.006	0.005	-0.001	0.002	-0.003	0.001	0.002	-0.002
306	0.003	-0.001	0.004	0.001	-0.002	-0.005	0.003	0.002	0.000	-0.004	0.003	0.000	0.002	0.000	0.002	0.000	0.000	-0.001	0.000	-0.001	0.003
307	-0.002	0.006	-0.003	-0.005	0.001	-0.013	-0.001	0.005	-0.005	-	-	-	-0.004	0.004	-0.001	0.005	0.007	-0.001	-0.002	0.003	-0.005
308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	0.010	0.065	-0.005	-	-	-	-	-	-	0.013	0.072	0.012	-	-	-	-	-	-	0.000	0.068	-0.006
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	-	-	-	-	-	-	-	-	-	0.007	0.005	-0.004	-	-	-	0.002	-0.007	-0.004	-	-	-
317	-	-	-	-	-	-	-	-	-	0.012	0.004	-0.013	-	-	-	0.004	-0.010	-0.004	-	-	-
318	-	-	-	-	-	-	-	-	-	0.009	-0.005	-0.020	-	-	-	-	-	-	-	-	-
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-0.002	0.006	0.001	0.003	0.006	-0.001	0.000	0.007	0.002	-	-	-	-0.003	0.006	-0.010	-	-	-	-	-	-
321	0.000	0.008	0.003	0.003	0.008	0.002	0.002	0.012	-0.001	-	-	-	-0.001	0.007	-0.010	-	-	-	-	-	-
322	0.002	0.000	-0.011	0.006	0.002	-0.014	0.005	-0.004	-0.020	-	-	-	-0.001	0.000	-0.020	-	-	-	-	-	-
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	10/18/2021 - B			10/19/2021 - A			10/19/2021 - B			10/20/2021			10/26/2021			10/27/2021 - A			10/27/2021 - B		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	0.017	-0.009	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	-	-	-	0.008	-0.007	-0.004	0.007	-0.001	-0.001	0.016	-0.012	-0.001	-	-	-	-	-	-	-	-	-
304	0.011	-0.001	0.000	0.011	0.005	-0.002	0.014	0.004	0.000	0.016	-0.001	0.003	0.008	0.001	-0.002	-	-	-	-	-	-
305	0.002	0.002	-0.004	0.002	0.003	-0.009	0.004	0.006	-0.006	0.006	0.000	-0.003	-	-	-	-	-	-	-	-	-
306	0.006	0.000	0.001	0.000	0.001	-0.005	0.003	0.003	-0.006	0.003	0.001	0.001	0.002	0.000	-0.001	-	-	-	-	-	-
307	0.006	0.008	-0.006	-0.002	-0.001	-0.010	0.005	0.005	-0.009	-	-	-	0.000	0.003	-0.008	-	-	-	-	-	-
308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	0.005	0.064	-0.011	-0.002	0.069	-0.019	0.009	0.066	-0.006	-	-	-	-	-	-	-	-	-	-	-	-
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	0.005	0.007	-0.002	0.010	0.008	-0.014	0.011	0.008	-0.006	-	-	-	0.006	0.006	-0.001	0.008	0.005	-0.007	0.008	0.012	-0.002
317	0.010	0.006	-0.012	0.012	0.005	-0.024	0.012	0.005	-0.016	-	-	-	0.044	-0.015	-0.005	0.046	-0.014	-0.013	0.046	-0.008	-0.007
318	0.008	-0.008	-0.020	0.009	-0.006	-0.034	0.009	-0.005	-0.024	-	-	-	0.013	-0.012	-0.022	0.014	-0.013	-0.027	0.013	-0.007	-0.023
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-0.001	0.004	-0.015	0.000	0.005	-0.005	-0.001	0.007	-0.005	-	-	-	0.001	-0.001	-0.016	0.006	0.007	-0.010	-0.007	0.006	-0.003
321	0.001	0.009	-0.015	0.004	0.007	-0.001	0.003	0.007	-0.002	-	-	-	0.001	0.001	-0.023	0.003	0.005	0.000	-0.001	0.007	0.000
322	-0.008	-0.007	-0.006	-0.032	-0.009	-0.008	0.018	0.001	-0.025	-	-	-	-0.013	-0.011	-0.010	-0.014	-0.010	-0.020	-0.018	-0.005	-0.014
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	10/28/2021			11/1/2021			11/02/2021 - A			11/02/2021 - B			11/03/2021 - A			11/03/2021 - B			11/04/2021 - A		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.014	-0.007	0.025
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	-	-	-	-	-	-	0.009	-0.009	-0.007	0.007	-0.006	-0.005	0.011	-0.010	0.020	0.024	-0.025	0.021	0.008	-0.004	0.020
304	-	-	-	-	-	-	0.012	0.006	-0.005	0.010	0.008	-0.008	0.018	0.000	0.018	0.025	-0.012	0.016	0.015	0.005	0.017
305	-	-	-	-	-	-	0.003	0.001	-0.009	0.004	0.005	-0.009	0.004	0.000	0.008	0.005	-0.008	0.007	-	-	-
306	-	-	-	-	-	-	0.002	0.000	-0.007	-0.001	0.000	-0.007	0.002	-0.005	0.005	0.002	-0.004	0.006	0.000	-0.005	0.006
307	-	-	-	-	-	-	0.004	-0.001	-0.015	0.007	0.001	-0.014	0.004	-0.007	-0.002	0.004	-0.009	-0.003	0.006	-0.001	0.000
308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	-	-	-	-	-	-	-	-	-	-	-	-	0.010	0.072	0.012	-0.004	0.070	0.013	0.018	0.075	0.013
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	0.010	0.007	-0.011	0.009	0.009	-0.011	0.006	0.005	-0.009	-	-	-	0.009	0.011	-0.003	0.010	0.013	-0.004	-	-	-
317	0.047	-0.013	-0.016	0.047	-0.013	-0.016	0.044	-0.016	-0.016	-	-	-	0.045	-0.011	-0.010	0.047	-0.009	-0.010	-	-	-
318	0.015	-0.010	-0.032	0.014	-0.011	-0.034	0.011	-0.015	-0.033	-	-	-	0.011	-0.009	-0.028	0.009	-0.009	-0.028	-	-	-
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-0.004	0.000	-0.016	-0.002	0.008	-0.023	-	-	-	0.000	0.008	-0.003	-0.008	0.008	-0.003	-	-	-	-	-	-
321	-0.001	0.001	-0.015	0.000	0.005	-0.036	-	-	-	0.002	0.004	-0.006	0.000	0.006	-0.010	-	-	-	-	-	-
322	-0.016	-0.008	-0.009	-0.007	-0.008	-0.020	-	-	-	-0.005	-0.006	-0.019	-0.017	-0.009	-0.026	-	-	-	-	-	-
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	11/04/2021 - B			11/05/2021 - A			11/05/2021 - B			11/08/2021 - A			11/08/2021 - B			11/09/2021 - A			11/09/2021 - B		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	0.018	-0.015	0.023	0.022	-0.017	0.017	0.019	-0.009	0.017	0.016	-0.012	0.007	0.013	0.012	0.004	0.022	-0.018	0.003	0.020	-0.014	0.001
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	0.012	-0.014	0.019	0.016	-0.019	0.011	0.012	-0.010	0.013	0.007	-0.004	0.001	0.007	-0.004	0.001	0.016	-0.017	-0.003	0.016	-0.014	-0.002
304	0.017	0.001	0.016	0.018	-0.004	0.008	0.016	0.001	0.010	0.010	0.006	0.000	0.015	0.016	-0.004	0.015	-0.001	-0.004	0.017	-0.003	-0.006
305	-	-	-	0.002	-0.002	-0.002	0.003	0.002	0.002	0.002	0.007	-0.008	-	-	-	0.003	0.000	-0.007	0.003	0.004	-0.009
306	0.001	-0.003	0.008	0.001	-0.003	-0.001	0.000	-0.001	0.000	-0.001	0.001	-0.004	0.001	-0.001	-0.006	0.002	0.001	-0.003	0.000	0.002	-0.003
307	0.005	-0.002	0.001	0.006	-0.007	-0.010	-	-	-	0.007	0.001	-0.014	0.015	0.000	-0.015	0.005	-0.004	-0.011	0.007	-0.001	-0.015
308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	0.010	0.070	0.010	-	-	-	0.012	0.075	0.009	0.015	0.084	-0.009	0.025	0.071	-0.018	-0.001	0.081	-0.004	0.010	0.082	-0.004
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	0.006	0.006	0.000	0.008	0.008	0.009	-	-	-	0.004	0.008	-0.007	0.006	0.007	-0.004	0.008	0.008	-0.002	-0.001	0.006	0.001
317	0.048	-0.012	-0.007	0.049	-0.013	-0.015	-	-	-	0.049	-0.013	-0.013	0.049	-0.014	-0.011	0.047	-0.014	-0.008	0.048	-0.013	-0.013
318	0.010	-0.008	-0.023	0.012	-0.011	-0.032	-	-	-	0.014	-0.008	-0.032	0.013	-0.012	-0.029	0.013	-0.009	-0.028	0.013	-0.009	-0.032
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-0.003	0.018	0.003	-0.007	0.008	0.000	-	-	-	-0.002	0.006	-0.002	-	-	-	-0.004	0.004	-0.019	-	-	-
321	-0.002	0.008	-0.004	0.000	0.002	-0.004	-	-	-	0.000	0.001	-0.004	-	-	-	0.000	0.002	-0.031	-	-	-
322	-0.007	-0.006	-0.014	-0.017	-0.009	-0.015	-	-	-	-0.009	-0.006	-0.022	-	-	-	-0.014	-0.012	-0.015	-	-	-
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	11/10/2021			11/11/2021			11/12/2021 - A			11/12/2021 - B			11/16/2021			11/17/2021 - A			11/17/2021 - B		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	-	-	-	0.020	-0.012	0.004	-	-	-	-	-	-	0.022	-0.019	-0.003	0.029	-0.015	0.007	-	-	-
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	0.011	-0.017	-0.002	-	-	-	0.028	-0.009	0.007	0.026	-0.007	0.015	0.015	-0.019	-0.004	0.020	-0.014	0.006	0.018	-0.012	0.001
304	0.013	-0.003	-0.010	0.014	0.004	-0.005	0.027	0.003	0.009	0.026	0.006	0.011	0.014	0.004	-0.006	0.021	0.001	0.003	0.019	0.002	-0.003
305	0.002	-0.002	-0.012	0.004	0.004	-0.007	0.015	-0.003	0.004	0.012	0.001	0.002	0.001	0.001	-0.008	0.007	-0.001	-0.002	0.007	0.000	-0.009
306	0.000	-0.001	-0.005	0.003	0.002	-0.001	0.004	-0.002	0.007	0.004	-0.001	0.007	-0.001	-0.003	-0.003	0.001	-0.003	0.004	0.000	-0.001	-0.005
307	0.007	0.000	-0.015	0.008	0.002	-0.012	0.017	-0.005	-0.006	0.015	-0.007	-0.003	0.005	-0.006	-0.015	0.009	-0.002	-0.006	0.009	-0.002	-0.012
308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	-	-	-	-	-	-	-	-	-	-	-	-	0.014	0.084	-0.015	0.018	0.080	-0.002	0.014	0.076	-0.008
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	0.004	0.005	-0.002	0.005	0.009	-0.011	0.006	0.009	-0.011	0.008	0.011	-0.010	0.021	0.006	-0.005	0.025	0.006	-0.009	0.025	0.006	-0.008
317	0.047	-0.016	-0.006	0.048	-0.013	-0.016	0.046	-0.010	-0.017	0.046	-0.010	-0.018	0.072	-0.022	-0.012	0.073	-0.022	-0.015	0.072	-0.019	-0.015
318	0.013	-0.014	-0.025	0.013	-0.011	-0.037	0.013	-0.015	-0.037	0.012	-0.013	-0.037	0.052	-0.014	-0.033	0.051	-0.018	-0.036	0.050	-0.014	-0.036
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-0.008	0.010	0.001	-0.005	0.008	-0.004	-0.003	0.001	0.008	-0.003	0.000	0.008	-0.009	0.006	0.002	-	-	-	-0.006	0.007	-0.003
321	-0.005	0.005	-0.007	-0.002	0.005	-0.006	0.002	-0.002	0.006	0.002	-0.002	0.006	-0.006	0.001	-0.010	-	-	-	-0.001	0.005	-0.007
322	-0.018	-0.006	-0.027	-0.016	-0.010	-0.023	-0.012	-0.016	-0.009	-0.013	-0.016	-0.009	-0.021	-0.009	-0.029	-	-	-	-0.016	-0.008	-0.020
323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)																				
	12/6/2021			12/7/2021			12/8/2021			12/9/2021 - A			12/9/2021 - B			12/10/2021			12/13/2021		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	0.018	-0.009	-0.003	0.005	-0.005	-0.002	-	-	-	-	-	-	-	-	-	0.025	-0.009	0.013	0.016	0.002	0.010
304	0.019	0.008	-0.009	0.012	0.016	-0.006	-	-	-	0.024	0.011	-0.001	0.027	0.005	-0.003	0.027	0.008	0.006	0.021	0.016	0.007
305	0.006	0.006	-0.010	0.002	0.008	-0.007	-	-	-	0.010	0.000	-0.007	0.009	-0.003	-0.009	0.010	0.002	0.000	0.008	0.008	-0.004
306	-0.001	0.001	-0.004	-0.002	0.000	-0.002	-	-	-	0.003	-0.004	-0.008	0.000	-0.003	-0.007	-0.004	-0.001	0.001	-	-	-
307	0.013	0.004	-0.017	0.010	0.004	-0.015	-	-	-	0.014	-0.006	-0.016	0.015	-0.010	-0.016	0.013	-0.009	-0.009	-	-	-
308	-	-	-	0.036	0.004	-0.045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	0.022	0.081	-0.011	0.027	0.090	-0.016	-	-	-	0.019	0.072	-0.003	0.011	0.072	-0.007	0.016	0.073	0.010	0.029	0.075	-0.001
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	0.007	0.010	-0.007	0.009	0.009	-0.005	0.013	0.008	-0.005	0.011	0.010	-0.004	0.011	0.009	-0.005	0.009	0.011	0.000	-	-	-
317	0.050	-0.015	-0.016	0.050	-0.015	-0.015	0.050	-0.016	-0.015	0.046	-0.015	-0.015	0.046	-0.015	-0.014	0.050	-0.014	-0.009	-	-	-
318	0.020	-0.012	-0.041	0.018	-0.011	-0.040	0.020	-0.012	-0.039	0.013	-0.015	-0.037	0.014	-0.015	-0.038	0.020	-0.015	-0.032	-	-	-
319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
321	-0.005	-0.004	-0.004	-0.003	0.001	-0.011	-0.002	0.003	-0.003	-0.003	-0.001	0.001	-0.004	-0.002	0.000	-0.003	-0.002	-0.005	0.001	0.000	-0.025
322	-0.019	-0.013	-0.031	-0.017	-0.011	-0.029	0.006	-0.004	-0.022	-0.013	-0.014	-0.025	-0.012	-0.015	-0.024	-0.013	-0.016	-0.001	-	-	-
323	-	-	-	0.000	0.000	0.000	-	-	-	0.000	-0.003	0.005	0.001	-0.002	0.005	0.002	-0.003	0.027	0.002	-0.005	0.012
324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fort Iron and Metal - Prism Monitoring

#	Difference from Baseline (Current - Baseline)								
	12/14/2021			12/15/2021			12/16/2021		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
300	-	-	-	-	-	-	-	-	-
301	-	-	-	-	-	-	-	-	-
302	-	-	-	-	-	-	-	-	-
303	0.027	-0.012	0.016	0.027	-0.008	0.009	0.026	-0.013	0.019
304	0.026	0.009	0.010	-	-	-	0.027	0.001	0.015
305	0.009	0.002	0.004	0.013	0.005	-0.003	0.013	0.001	0.002
306	-0.001	-0.003	0.004	-0.001	-0.001	-0.006	0.001	-0.001	0.008
307	0.014	-0.003	-0.007	0.014	-0.004	-0.015	0.013	-0.007	-0.005
308	-	-	-	-	-	-	-	-	-
309	-	-	-	-	-	-	-	-	-
310	-	-	-	-	-	-	-	-	-
311	-	-	-	-	-	-	-	-	-
312	-	-	-	-	-	-	-	-	-
313	-	-	-	-	-	-	-	-	-
314	0.027	0.077	0.006	-	-	-	0.018	0.080	0.009
315	-	-	-	-	-	-	-	-	-
316	0.009	0.006	-0.008	0.015	0.010	0.000	0.015	0.007	-0.006
317	0.052	-0.015	-0.019	0.051	-0.011	-0.012	0.050	-0.009	-0.017
318	0.018	-0.015	-0.042	0.014	-0.010	-0.025	0.010	-0.011	-0.029
319	-	-	-	-	-	-	-	-	-
320	-	-	-	-	-	-	-	-	-
321	-0.001	0.001	-0.020	-0.003	0.002	0.002	0.000	0.006	0.004
322	-	-	-	-	-	-	-	-	-
323	0.002	0.000	0.023	0.001	-0.001	0.017	-0.001	-0.003	0.017
324	-	-	-	0.000	0.000	0.000	0.002	-0.002	0.000
325	-	-	-	0.000	0.000	0.000	0.005	-0.003	0.001

3. Vertical monitoring data

Fort Iron and Metal Vertical Monitoring

Type	#	Baseline		Elevation Difference from Baseline (Current - Baseline)													
		Date	Elevation	9/18/2021	9/19/2021	9/20/2021	9/21/2021	9/23/2021	9/24/2021	9/25/21-A	9/25/21-B	9/26/21-A	9/26/21-B	9/27/2021	9/28/2021	9/29/21-A	9/29/21-B
Benchmarks	250	9/18/2021	105.837	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	100			-	-	-	-	-	-	-	-	-	-	-	-	-	-
	101			-	-	-	-	-	-	-	-	-	-	-	-	-	-
	102	9/18/2021	104.291	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-
	103	9/18/2021	105.172	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-
	104	9/18/2021	107.372	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-
	105	9/19/2021	107.927	0.000	0.000	0.002	0.002	0.001	0.002	0.001	0.000	0.003	0.001	0.002	0.003	0.002	0.003
	106	12/7/2021	105.921	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	221	12/15/2021	101.653	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	222	12/13/2021	104.573	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Monitor Points	200	9/19/2021	104.060	-	0.000	0.002	0.000	0.001	0.002	-0.001	0.000	-0.003	-	0.000	-0.003	-0.001	0.000
	201	9/19/2021	103.938	-	0.000	-0.001	-0.002	0.001	0.005	0.002	-0.001	-0.002	-	0.001	-0.004	0.007	-0.003
	202	9/19/2021	104.487	-	0.000	-0.001	-0.002	-0.003	-0.002	-0.006	-0.006	-0.008	-	-0.004	-0.008	-0.007	-0.006
	203	9/19/2021	104.520	-	0.000	0.000	-0.001	-0.002	-0.001	-0.004	-0.003	-0.003	-	-0.001	-0.004	-0.004	-0.002
	204	9/19/2021	105.114	-	0.000	0.000	-0.001	-0.002	-0.001	-0.004	-0.003	-0.006	-	-0.004	-0.007	-0.009	-0.007
	205	9/19/2021	104.966	-	0.000	0.001	-0.001	-0.001	-0.002	-0.006	-0.006	-0.009	-	-0.007	-0.010	-0.012	-0.010
	208	9/19/2021	107.771	-	0.000	-0.001	-0.001	-0.003	-0.004	-0.006	-0.006	-0.006	-0.005	-0.007	-0.011	-0.015	-0.013
	209	9/19/2021	107.616	-	0.000	0.005	0.003	0.003	0.004	0.002	0.002	0.004	0.002	0.001	0.002	-0.001	-0.001
	210	9/19/2021	106.616	-	0.000	0.000	0.002	-0.001	0.000	-0.001	-0.001	0.001	0.000	-0.001	0.000	-0.002	-0.002
	211	9/19/2021	102.595	-	0.000	0.000	0.002	0.000	0.002	0.001	0.001	0.004	0.005	0.004	0.004	0.003	0.003
	212	9/19/2021	106.464	-	0.000	0.000	-0.001	0.000	0.000	-0.002	-0.002	-0.004	-	-0.002	-0.005	-0.004	-0.002
	213	9/19/2021	104.393	-	0.000	-0.001	0.000	0.000	0.000	-0.001	-0.002	0.003	-	-0.001	0.001	0.001	0.000
	216	10/11/2021	106.989	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	217	10/11/2021	107.688	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	10/11/2021	103.504	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	219	10/27/2021	106.699	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	220	12/10/2021	102.941	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPs	6	9/21/2021	105.885	-	-	-	0.000	-0.001	0.001	-0.001	-0.003	0.003	0.000	0.002	0.002	0.003	0.001
	7	9/21/2021	106.020	-	-	-	0.000	0.001	0.001	-0.002	-0.004	0.002	-0.002	-0.001	-0.003	-0.002	-0.006

Fort Iron and Metal Vertical Monitoring

Type	#	Elevation Difference from Baseline (Current - Baseline)														
		9/30/21-A	9/30/21-B	10/01/21-A	10/01/21-B	10/2/2021	10/04/21-A	10/04/21-B	10/05/21-A	10/05/21-B	10/06/21-A	10/06/21-B	10/07/21-A	10/07/21-B	10/8/2021	10/9/2021
Benchmarks	250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	105	0.002	-	0.002	0.002	0.003	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.001	-0.001	0.000
	106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Monitor Points	200	0.003	-0.002	0.003	0.001	-0.002	-0.003	-0.002	0.002	-0.001	-0.002	-0.002	-0.003	-0.004	-0.006	-
	201	-0.003	-0.002	-0.001	-0.003	-0.003	0.000	-0.002	0.001	-0.001	-0.004	-0.003	-0.004	-0.005	-0.009	-
	202	-0.009	-	-	-	-0.010	-0.011	-0.009	-0.007	-0.009	-0.011	-0.011	-0.011	-0.012	-0.013	-
	203	-0.003	-0.004	-0.002	-0.004	-0.003	-0.005	-0.004	0.001	-0.003	-0.005	-0.005	-0.005	-0.007	-0.009	-
	204	-0.010	-0.010	-0.011	-0.012	-0.013	-0.016	-0.014	-0.010	-0.013	-0.016	-0.019	-0.019	-0.021	-0.023	-
	205	-0.013	-0.013	-0.012	-	-	-0.017	-0.015	-0.012	-0.015	-0.016	-0.017	-0.018	-0.019	-	-
	208	-0.017	-0.018	-0.020	-0.020	-0.022	-0.024	-0.023	-0.038	-0.043	-0.051	-0.060	-0.062	-0.063	-0.069	-
	209	-0.002	-	-0.001	-0.002	-0.001	-0.003	-0.004	-0.006	-0.005	-0.006	-0.007	-0.009	-	-	-0.006
	210	-0.003	-	-0.001	-0.002	-0.001	-0.002	-0.003	-0.002	-0.001	-0.001	-0.003	-	-	-	-0.004
	211	0.002	-	0.002	0.003	0.004	0.002	0.001	0.004	0.004	0.003	0.003	0.002	0.004	0.002	0.001
	212	-0.004	-0.004	-0.004	-0.004	-0.004	-0.005	-0.005	0.001	-0.003	-0.004	-0.004	-0.004	-0.007	-0.007	-
	213	-0.001	0.000	0.001	-0.001	0.002	-0.001	-0.004	0.002	0.002	0.002	0.000	0.000	0.000	-0.003	-0.002
	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPs	6	0.000	-	0.001	-0.002	0.002	0.000	0.000	0.000	0.000	-0.002	-0.001	-	-	-	-
	7	-0.006	-	-0.009	-0.012	-0.008	-0.011	-0.008	-0.012	-0.011	-0.013	-0.012	-	-	-	-

Fort Iron and Metal Vertical Monitoring

Type	#	Elevation Difference from Baseline (Current - Baseline)														
		10/11/21-A	10/11/21-B	10/12/21-A	10/12/21-B	10/13/2021	10/14/21-A	10/14/21-B	10/15/2021	10/18/21-A	10/18/21-B	10/26/2021	10/27/2021	10/28/2021	11/1/2021	11/2/21-A
Benchmarks	250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	102	-	0.000	0.000	-	0.000	0.000	-	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000
	103	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
	104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	105	0.001	0.003	-	0.000	0.002	0.001	0.002	0.000	0.000	-	0.000	0.000	-0.001	-0.005	0.001
	106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Monitor Points	200	-0.006	-0.004	-0.002	-	-0.002	-0.001	0.000	-0.002	-0.008	-0.008	-0.005	-0.005	-0.007	-	-
	201	-0.007	-0.005	-0.004	-	-0.005	-0.003	-0.001	0.001	-0.010	-0.011	-0.008	-0.008	0.000	-0.008	-
	202	-0.013	-0.012	-0.010	-	-0.010	-0.008	-0.007	0.001	-0.012	-0.014	-0.013	-0.007	-	-	-0.012
	203	-0.009	-0.007	-0.005	-	-0.004	-0.004	-0.004	0.000	-0.005	-0.006	-0.004	-0.007	0.001	-0.008	-0.013
	204	-0.024	-0.022	-0.019	-	-0.021	-0.020	-0.020	0.000	-0.017	-0.020	-0.021	-0.021	-0.021	-0.024	-0.025
	205	-0.031	-0.029	-0.025	-	-0.025	-0.025	-0.026	-0.001	-0.030	-0.031	-0.031	-0.029	-0.030	-	-
	208	-0.076	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	209	-	-	-	-	-	-0.008	-0.007	-0.009	-0.005	-	-0.010	-0.011	-0.011	-0.013	-0.010
	210	-	-	-	-0.003	-	-0.004	-0.003	-0.005	0.001	-	-0.007	-	-	-0.015	-0.006
	211	0.006	0.006	-	0.005	0.008	0.004	0.006	0.003	0.002	-	-0.003	-0.003	-0.002	0.000	0.005
	212	-0.009	-0.008	-0.005	-	-0.006	-0.005	-0.004	-	-0.006	-0.007	-0.006	-0.007	-0.006	-0.010	-0.008
	213	0.000	0.001	-	0.000	0.001	-0.001	-0.001	-0.004	-0.003	-	-0.007	-0.004	-0.003	-0.002	0.001
	216	-	0.000	0.005	-	0.003	0.003	-	0.007	0.004	-	0.003	0.002	0.001	0.003	0.004
	217	-	0.000	0.001	-	0.003	0.005	-	0.009	0.006	-	-	-	-	-	-
	218	-	0.000	0.001	-	0.004	0.003	-	0.007	-0.001	-	0.000	0.002	0.001	0.005	0.004
	219	-	-	-	-	-	-	-	-	-	-	0.000	0.000	0.001	-0.001	0.005
	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPs	6	-	-	-	-	-	-	-	-0.001	-	-	-	-0.013	-0.010	0.007	-0.001
	7	-	-	-	-	-	-	-	-0.010	-	-	-	-0.026	-0.021	-0.007	-0.014

Fort Iron and Metal Vertical Monitoring

Type	#	Elevation Difference from Baseline (Current - Baseline)														
		11/2/21-B	11/3/21-A	11/3/21-B	11/4/21-A	11/4/21-B	11/5/21-A	11/5/21-B	11/9/21-A	11/9/21-B	11/10/2021	11/16/2021	11/17/21-A	11/17/21-B	12/6/2021	12/7/2021
Benchmarks	250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	102	-	-	0.000	0.000	-	0.000	-	0.000	-	0.000	0.000	0.000	-	0.000	0.000
	103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	105	-0.001	0.000	-	0.000	-	-0.001	0.000	-	0.000	0.000	-	0.000	0.000	0.002	0.001
	106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Monitor Points	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	201	-	-0.009	-	-0.010	-0.008	-0.011	-0.008	-0.013	-0.012	-0.010	-0.007	-0.011	-	-0.010	-0.007
	202	-0.023	-0.016	-	-0.016	-0.014	-	-	-	-	-	-0.012	-0.017	-	-0.016	-0.015
	203	-0.020	-0.012	-	-0.011	-0.009	-0.012	-0.008	-0.012	-0.011	-0.010	-0.007	-0.012	-	-0.010	-0.009
	204	-0.036	-0.028	-	-0.029	-0.027	-0.031	-0.027	-0.032	-0.031	-0.030	-0.029	-0.032	-	-0.031	-0.031
	205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	209	-0.013	-0.011	-0.008	-	-	-0.010	-	-0.011	-0.010	-0.011	-0.011	-0.013	-0.011	-0.011	-0.012
	210	-0.009	-0.008	-0.006	-0.007	-0.008	-0.007	-0.008	-	-	-0.008	-0.008	-0.010	-0.008	-0.007	-0.008
	211	0.003	0.005	0.005	0.005	0.005	0.006	0.003	0.004	0.005	0.006	0.003	0.002	0.005	0.004	0.002
	212	-0.019	-0.008	-	-0.008	-0.006	-0.011	-0.007	-0.012	-0.010	-0.009	-0.010	-0.013	-	-0.014	-0.012
	213	0.002	0.002	0.002	0.001	0.000	-0.005	-0.001	-0.001	0.000	0.001	0.000	-0.003	-0.001	-	-
	216	-	-	0.002	-0.001	-	-0.003	-	0.001	-	0.005	0.012	0.013	-	0.022	0.023
	217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	-	-	0.009	0.005	-	0.003	-	0.006	-	0.004	-0.003	-0.002	-	0.011	0.015
	219	-	-	0.003	0.000	-	-0.004	-	0.001	-	0.000	0.000	-0.004	-	0.010	0.014
	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPs	6	-	0.001	-	0.000	-	-0.006	-	-0.003	-	-0.002	-0.002	-0.002	-	0.000	0.000
	7	-	-0.014	-	-0.013	-	-0.020	-	-0.019	-	-0.016	-0.017	-0.020	-	-0.022	-0.022

Fort Iron and Metal Vertical Monitoring

Type	#	Elevation Difference from Baseline (Current - Baseline)						
		12/8/2021	12/9/2021	12/10/2021	12/13/2021	12/14/2021	12/15/2021	12/16/2021
Benchmarks	250	-	0.000	0.000	0.000	0.000	0.000	0.000
	100	-	-	-	-	-	-	-
	101	-	-	-	-	-	-	-
	102	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	103	-	-	-	-	-	-	-
	104	-	-	-	-	-	-	-
	105	-	0.000	-0.002	-0.002	-0.003	-0.002	-0.003
	106	-	-	-	-0.006	-	-	-
	221	-	-	-	-	-	0.000	0.003
	222	-	-	-	0.000	0.003	0.005	-0.016
Surface Monitor Points	200	-	-	-	-	-	-	-
	201	-	-0.009	-0.011	-0.006	-0.012	-0.014	-0.010
	202	-	-	-	-0.014	-0.019	-0.019	-0.019
	203	-	-0.011	-0.011	-0.008	-0.014	-0.015	-0.010
	204	-	-0.032	-0.032	-0.032	-0.036	-0.035	-0.032
	205	-	-	-	-	-	-	-
	208	-	-	-	-	-	-	-
	209	-	-0.013	-0.012	-0.015	-0.016	-0.014	-0.016
	210	-	-0.006	-0.012	-0.010	-0.013	-0.012	-0.012
	211	-	0.009	0.005	0.007	0.002	-	0.004
	212	-	-0.015	-0.014	-0.015	-0.017	-0.018	-0.014
	213	-	-0.008	-0.012	-0.009	-0.015	-0.014	-0.015
	216	0.017	0.020	0.013	0.025	0.028	0.025	0.026
	217	-	-	-	-	-	-	-
	218	0.008	0.013	0.006	0.003	0.008	0.009	0.009
	219	0.010	0.016	0.010	0.004	0.009	0.006	0.005
	220	-	0.000	-0.001	-0.014	0.003	-0.011	-0.005
CPs	6	-	0.000	-0.001	-0.002	-0.004	-0.005	-0.004
	7	-	-0.017	-0.015	-0.014	-0.021	-0.024	-0.020

4. Monitoring data location descriptions

Fort Iron and Metal Monitoring Descriptions

Type	#	Description
Surface Monitor Points	200	MAG NAIL IN TOP OF CONCRETE CURB ON THE NORTH SIDE OF DEARBORN ST.
	201	MAG NAIL IN CONCRETE SIDEWALK ON SOUTH SIDE OF DEARBORN ST.
	202	MAG NAIL IN TOP OF CONCRETE CURB ON THE SOUTH SIDE OF DEARBORN ST.
	203	MAG NAIL IN TOP OF CONCRETE CURB ON THE NORTH SIDE OF DEARBORN ST.
	204	MAG NAIL IN TOP OF CONCRETE CURB ON THE NORTH SIDE OF DEARBORN ST.
	205	MAG NAIL IN TOP OF CONCRETE CURB ON THE SOUTH SIDE OF DEARBORN ST.
	208	MAG NAIL IN CONCRETE ISLAND AT NE CORNER OF W. FORT ST. AND DEARBORN ST.
	209	TOP OF NE NUT OF TRAFFIC POLE AT THE SE CORNER OF W. FORT ST. AND DEARBORN ST.
	210	CHISELED X IN W RIM OF TELEPHONE MANHOLE ON THE EAST SIDE OF W. FORT ST.
	211	MAG NAIL IN CONCRETE SIDEWALK ON THE EAST SIDE OF W. FORT ST.
	212	BENCHTIE IN SOUTH FACE UTILITY POLE ON THE NORTH SIDE OF DEARBORN ST.
	213	BENCHTIE IN WEST FACE UTILITY POLE ON THE EAST SIDE OF W. FORT ST.
	216	MAG NAIL IN TOP OF CONCRETE BLOCK EAST OF OFFICE.
	217	6IN SPIKE IN CONCRETE EAST OF OFFICE.
	218	5/8" X 24" IRON ROD EAST OF OFFICE.
	219	MAG NAIL IN CONCRETE SOUTH OF WASH STATION.
	220	MAG NAIL IN TOP OF CURB ON SOUTH SIDE OF DEARBORN ST.
Prism Points	300	PRISM ON FRONT OF APARTMENT BUILDING ON W. FORT ST.
	301	X ON WEST RIM MH IN DEARBORN ST
	302	MAG NAIL IN DEARBORN ST
	303	PRISM ON FRONT OF APARTMENT BUILDING ON W. FORT ST.
	304	PRISM ON FRONT OF PLATING BUILDING ON W. FORT ST.
	305	PRISM ON FRONT OF PLATING BUILDING ON W. FORT ST.
	306	PRISM ON TRAFFIC POLE NW CORNER OF DEARBORN ST. AND W. FORT ST.
	307	PRISM ON TRAFFIC POLE SW CORNER OF DEARBORN ST. AND W. FORT ST.
	308	PRISM ON FENCE ON W. FORT ST.
	309	PRISM ON UTILITY POLE ON DEARBORN ST.
	310	PRISM ON UTILITY POLE ON DEARBORN ST.
	311	PRISM ON UTILITY POLE ON DEARBORN ST.
	312	PRISM ON FENCE ON DEARBORN ST.
	313	PRISM ON FENCE ON DEARBORN ST.
	314	PRISM ON UTILITY POLE ON DEARBORN ST.
	315	MAG NAIL IN BACK ASPHALT PARKING LOT OF STICKY DETROIT
	316	PRISM ON BACK OF PLATING BUILDING
	317	PRISM ON BACK OF PLATING BUILDING
	318	PRISM ON BLOCK WALL BETWEEN STICKY DETROIT AND FORT IRON AND METAL
	319	PRISM ON FENCE ON DEARBORN ST.
	320	PRISM ON SPUR RAIL TIE
	321	PRISM ON SPUR RAIL TIE
	322	PRISM ON SPUR RAIL TIE
	323	PRISM ON SPUR RAIL TIE



Prism Monitoring



Legend

- ▲ Control Point
- Prism Point
- Prism Point - Gone



100 ft



Vertical Monitoring



Legend

5. Ground vibration monitoring report



Testing Engineers & Consultants, Inc.

1343 Rochester Road • PO Box 249 • Troy, Michigan 48099-0249
(248) 588-6200 or (313) T-E-S-T-I-N-G Fax (248) 588-6232
www.testingengineers.com

Engineering Client Success

GROUND VIBRATION MONITORING REPORT

PROJECT: Fort Iron & Metal

TEC PROJECT NUMBER: 62128-001A VM

LOCATION: 6507 Dearborn Street
Detroit, Michigan

MONITORING DATE: September 23, 2021

CLIENT: Butzel Long
41000 Woodward Avenue
Bloomfield Hills, MI 48304

WEATHER: Cloudy/Showers
51°F - 53°F

On this date, TEC arrived on site per the request of the client at 9:00 AM to perform a Ground Vibration Monitoring Study on the site adjacent to the Owner's ongoing work activities. This monitor was set up at the slag piles located at the west end of the scrap yard. The monitor was located 100' from Dearborn St. to begin with. It was moved about 5' several times to get a different perspective of vibration causing activities. At beginning of monitoring, an excavator was moved about 100' and parked for the balance of the day. This activity caused an event which was noted below. All other activity for the day was frontend loaders traveling by the adjacent monitor and removing the slag from the piles. Late in the day, this monitor was moved to the rail track area for the balance of the day. The same activity was occurring at the railroad tracks as with the other monitor. TEC utilized a GeoSonic SSU 3000 LCP Seismograph and Geophone to perform this vibration study. TEC remained on site monitoring until approximately 5:20 PM.

TRIGGER EVENT NO.	TIME	TEST LOCATION	RESULTANT PPV LEVEL (in/sec)	FREQUENCY (HZ)			COMMENTS
				L	T	V	
-	9:40AM-10:30AM	West slag location-100' from Dearborn St.	-	-	-	-	Move equipment
1	10:30AM	West slag location-100' from Dearborn St.	0.113	19.2	14.3	13.9	Frontend loader travel
-	10:30AM-11:05AM	West slag location-100' from Dearborn St.	-	-	-	-	Frontend loader travel
2	11:05AM	West slag location-100' from Dearborn St.	0.063	4.2	3.3	3.9	Frontend loader travel
-	11:06AM-11:37AM	West slag location-100' from Dearborn St.	-	-	-	-	Frontend loader travel
3	11:37AM	West slag location-100' from Dearborn St.	0.058	5.3	5.7	4.3	Frontend loader travel
-	11:38AM-1:35PM	West slag location-100' from Dearborn St.	-	-	-	-	Frontend loader travel
4	1:35PM	West slag location-100' from Dearborn St.	0.075	5.3	3.2	3.4	Frontend loader travel
-	1:41PM-1:42PM	West slag location-105' from Dearborn St.	-	-	-	-	Frontend loader travel
5	1:42PM	West slag location-105' from Dearborn St.	0.055	7.7	3.2	3.7	Frontend loader travel

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All services undertaken are subject to the following policy. Reports are submitted for exclusive use of the clients to whom they are addressed. Their significance is subject to the adequacy and representative character of the samples and the comprehensiveness of the tests, examinations and surveys made. No quotation from reports or use of TEC's name is permitted except as expressly authorized by TEC in writing.

CONSULTING ENGINEERS & FULL-SERVICE PROFESSIONAL TESTING AND INSPECTION
OFFICES IN ANN ARBOR, DETROIT, AND TROY
FOUNDED IN 1966

Testing Engineers & Consultants, Inc.

Butzel Long

Fort Iron & Metal

TEC Report Number: 62128-001A VM (09-23-21)

GROUND VIBRATION MONITORING REPORT (Cont'd)

TRIGGER EVENT NO.	TIME	TEST LOCATION	RESULTANT PPV LEVEL (in/sec)	FREQUENCY (HZ)			COMMENTS
				L	T	V	
-	1:43PM-2:01PM	West slag location-105' from Dearborn St.	-	-	-	-	Frontend loader travel
6	2:01PM	West slag location-105' from Dearborn St.	0.058	5.8	3.0	3.4	Frontend loader travel
-	2:01PM-2:18PM	West slag location-105' from Dearborn St.	-	-	-	-	Frontend loader travel
7	2:18PM	West slag location-105' from Dearborn St.	0.060	7.2	4.7	4.2	Frontend loader travel
-	2:19PM-2:40PM	West slag location-105' from Dearborn St.	-	-	-	-	Frontend loader travel
8	2:40PM	West slag location-105' from Dearborn St.	0.188	11.9	4.5	8.3	Frontend loader travel
-	2:43PM-2:55PM	West slag location-105' from Dearborn St.	-	-	-	-	Frontend loader travel
9	2:55PM	West slag location-105' from Dearborn St.	0.038	13.5	11.9	8.2	Frontend loader travel
-	2:55PM-2:58PM	West slag location-105' from Dearborn St.	-	-	-	-	Frontend loader travel
10	2:58PM	West slag location-110' from Dearborn St.	0.013	6.3	4.6	5.7	Frontend loader travel
-	3:00PM-3:12PM	West slag location-110' from Dearborn St.	-	-	-	-	Frontend loader travel
11	3:12PM	West slag location-110' from Dearborn St.	0.013	5.6	2.5	5.7	Frontend loader travel
-	3:12PM-3:15PM	West slag location-110' from Dearborn St.	-	-	-	-	Frontend loader travel
12	3:15PM	West slag location-110' from Dearborn St.	0.015	9.4	3.8	5.7	Frontend loader travel
-	3:16PM-3:40PM	West slag location-110' from Dearborn St.	-	-	-	-	Frontend loader travel
13	3:40PM	West slag location-110' from Dearborn St.	0.090	4.0	3.6	4.0	Frontend loader travel
-	3:42PM-3:50PM	West slag location-110' from Dearborn St.	-	-	-	-	Frontend loader travel
14	3:50PM	West slag location-110' from Dearborn St.	0.080	5.2	3.1	3.6	Frontend loader travel
-	3:51PM-3:57PM	West slag location-110' from Dearborn St.	-	-	-	-	Frontend loader travel
15	3:57PM	West slag location-110' from Dearborn St.	0.093	5.4	3.6	3.3	Frontend loader travel
-	3:58PM-4:20PM	West slag location-110' from Dearborn St.	-	-	-	-	Frontend loader travel
16	4:20PM	Middle of yard, 20' from tracks	0.025	3.2	3.8	4.1	Fort Iron's railcars moving
-	4:22PM-4:24PM	Middle of yard, 20' from tracks	-	-	-	-	Fort Iron's railcars moving

Testing Engineers & Consultants, Inc.

Butzel Long

Fort Iron & Metal

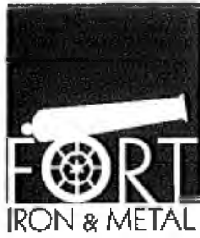
TEC Report Number: 62128-001A VM (09-23-21)

GROUND VIBRATION MONITORING REPORT (Cont'd)

TRIGGER EVENT NO.	TIME	TEST LOCATION	RESULTANT PPV LEVEL (in/sec)	FREQUENCY (HZ)			COMMENTS
				L	T	V	
17	4:24PM	Middle of yard, 20' from tracks	0.018	3.3	3.3	4.6	Fort Iron's railcars moving
-	4:25PM-4:28PM	Middle of yard, 20' from tracks	-	-	-	-	Fort Iron's railcars moving
18	4:28PM	Middle of yard, 20' from tracks	0.015	5.1	4.9	5.7	Fort Iron's railcars moving
-	4:29PM-4:38PM	Middle of yard, 20' from tracks	-	-	-	-	Fort Iron's railcars moving
19	4:38PM	Middle of yard, 25' from tracks	0.028	20.8	16.7	8.2	Fort Iron's railcars moving
-	4:39PM-4:48PM	Middle of yard, 25' from tracks	-	-	-	-	Fort Iron's railcars moving
20	4:48PM	Middle of yard, 25' from tracks	0.023	5.4	13.4	4.5	Fort Iron's railcars moving
-	4:49PM-5:15PM	Middle of yard, 25' from tracks	-	-	-	-	Fort Iron's railcars moving

SEISMOGRAPH ID: 8474

Prepared by: Michael Copeland/ip Reviewed by: Justin A. Ramoscc: Kaveh Kashef (kkashef@fortiron.com)



9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

December 20, 2021

Via Email

James D. Nosedá, Esq.
Supervising Assistant Corporation Counsel
City of Detroit Law Department
Coleman A. Young Municipal Building
2 Woodward Avenue, 5th Floor
Detroit, MI 48226
nosej@detroitmi.gov

Re: *Fort Iron & Metal Company v. The City of Detroit* (the “Litigation”)

Dear Mr. Nosedá:

I write as a follow-up to my December 17 correspondence to which we have not yet received a response.

The City’s December 16, 2021 Emergency Correction Order (the “Order”) specifically instructs our client that “... there shall be no additional storage of mill scale or similar weighted materials until a current geotechnical report signed and sealed by a licensed engineer is submitted to this Department for review and approval.” The Order requires such compliance by December 21, 2021. Of course, the Order is predicated on a so-called “inspection,” which did not occur, as well as a “failed inspection,” which is an impossibility given that no inspection occurred. As such, we still await an explanation as to the purpose or scope of an inspection. If the purpose of the inspection is to evaluate the soil strength of the facility, then we again suggest coordination amongst our respective engineers to perform soil borings with shared results.

In any event, the purpose of this correspondence is to confirm and repeat (as we have written in several correspondence, including our December 17 letter), Hog Brothers Properties, LLC (the owner and recipient of the Order) and Fort Iron & Metal (the operator) have complied with the Order and will continue to comply with the Order. **Fort Iron will not increase the quantities of “mill scale or similar weighted materials” at the facility.** Therefore, we are confirming compliance with the Order.

As we previously explained and disclosed, Fort Iron has, since before issuance of the Order, decreased the quantities of high-density materials at its facility by approximately 50%. We will also remind you that Fort Iron began these efforts well before the issuance of the Order. The process of moving materials began on September 15, 2021, when the City appeared at our facility demanding the midnight relocation of thousands of tons of materials to other locations at our yard, continued



9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

with our reduction of materials at the impacted area to an elevation of 591 feet (which the City described as “safe”), and continued with our voluntary reduction of the overall quantity of high-density materials at our facility.

The Order’s requirement of “a current geotechnical report” is conditioned upon Fort Iron bringing in additional materials which, again, Fort Iron is not doing and does not intend to do. Since November, Fort Iron has reduced its quantity of high-density materials by nearly 50% and, from the date of the Order, **Fort Iron commits that quantity will only decrease**. We tried to explain this to you on Friday, with no success. Given the unfortunate communication breakdown (including the fact that the City’s December 13, 2021 report was not provided to Fort Iron until December 16, 2021 and obviously provides no opinion as to Fort Iron’s current operations) it bears repeating that Fort Iron will not increase the total amount of those materials on site.

We respectfully propose a further discussion with you as to an equitable means of confirming (perhaps on a weekly or monthly basis via email) that we are not increasing the total quantities of high-density materials at our facility. It seems logical and appropriate that we engage cooperatively in that discussion as the interests of the City’s residents (including Fort Iron) are not advanced by lack of communication or unilateralism. Fort Iron’s agreement to these terms is to reach an amicable resolution of the Order and should not be considered an admission as to liability or any form of waiver of our rights. In the meantime, please confirm that the Order has been satisfied and let us know when you are available to have a discussion as to a means for us to report our quantity levels in compliance with the Order.

If the Order is not deemed “satisfied” by the City, please advise as to precisely what violation the City intends to levy against Hog Brothers Properties, LLC (to date, no tickets have been issued) and advise us as to the next available date for an appeal with City of Detroit’s Department of Administrative Hearings (as referenced at the end of the Order).

As always, we remain committed to safety and communication and are available for further discussion at your convenience.

Very truly yours,

Kaveh Kashaf

cc (via email): Charles Raimi, Esq.
Daniel J. McCarthy, Esq.
G2 Consulting
Spalding DeDecker
Frank C. DeNardo, Jr.



9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

December 22, 2021

Via Email

James D. Nosedo, Esq.
Supervising Assistant Corporation Counsel
City of Detroit Law Department
Coleman A. Young Municipal Building
2 Woodward Avenue, 5th Floor
Detroit, MI 48226
nosej@detroitmi.gov

Re: *Fort Iron & Metal Company v. The City of Detroit* (the “Litigation”)

Dear Mr. Nosedo:

Fort Iron & Metal Company (“Fort Iron”) remains interested in engaging in a positive and informed dialogue with the City of Detroit (the “City”), as opposed to inefficient and costly litigation.¹ In your last email, you commented on the “lengthy letters” I have sent to your office. Rest assured, the length of my correspondence is based on the substance and the seriousness of the consequences of the City’s conduct. It was my hope that my correspondence would receive a careful read by you, your office and others at the City and would result in the meaningful response and dialogue as warranted by the circumstances. Instead, the City has ignored us.

While your latest email adjourns the “due date” for a report to January 7, 2022, for the reasons outlined below, Fort Iron respectfully requests that the City issue a Certificate of Compliance (full or temporary), vacate or otherwise stay the December 16, 2021 Emergency Correction Order (the “Order”).

In my December 4, 2021 correspondence, among other things, Fort Iron raised concerns regarding the vagueness of the “bullet points” that had been outlined in the City’s October 21 email and that are repeated on page 2 of the Order. In addition to good faith questions regarding those bullet points, we provided suggested answers to each of the enumerated items. The City ignored these questions and answers.

¹ Since filing the Litigation to protect our due process rights, we have received, in quick succession, a lawsuit filed by DTE Energy, a nearly identical counterclaim filed by the City in the Litigation and, just today, a quickly drafted and filed “unjust enrichment” complaint by the City for alleged (and unspecified) unpaid water bills.



9607 Dearborn
 Detroit, Michigan 48209
 Phone: 313-357-FORT
 Fax: 313-841-8913

In my December 17, 2021 correspondence, among other things, at the City's request and as requested in the Order, Fort Iron identified the types of data used by G2 Consulting ("G2") to reach its November 17, 2021 opinion (the "G2 Report") that Fort Iron's current operations are safe. In addition to listing the data, we provided the City with 45 pages of detailed technical information that G2 utilized to reach its conclusions. Fort Iron provided this data with the expectation that, along with information contained in our December 4 correspondence, the September 15, 2021 Spalding DeDecker report (the "Spalding DeDecker Report"; which opined Fort Iron is safe to operate), and the lack of any data to support the lack of safety of our operations, the City would issue a Certificate of Compliance (or, at a minimum, a temporary certificate to allow further discussion), or otherwise vacate the Order. The City has ignored the delivery of this information.

In my December 21, 2021 correspondence, Fort Iron informed the City that, based on the language of the Order, Fort Iron had satisfied its conditions. Specifically, the Order precludes "additional storage of mill scale or similar weighted materials until a current geotechnical report signed and sealed by a licensed engineer" is received. Notwithstanding the fact that the City already has a signed and sealed report from one of the best geotechnical engineering firms in the state (the "G2 Report") along with corresponding back-up data,² the Order clearly states a geotechnical report is only required for "additional" storage of high-density materials. As I wrote on December 21, not only is Fort Iron complying with the Order by not bringing additional weights to its facility, since November, Fort Iron has steadily reduced its quantity of high-density materials at its facility by approximately 50%. Photographs taken on September 17 and December 17 are attached and reflect the reduction in materials.

While the photographs show the reduction of high-density materials throughout Fort Iron's facility, of particular note is the fact that the height of the materials in the area closest to the intersection of Fort Street and Dearborn Street (the only area of the facility that is referenced in the City's December 13, 2021 report) has been reduced to an elevation of 591 feet, which the City's engineers deemed "safe." At no time – even now – has the City advised Fort Iron what it considers to be a safe material height, notwithstanding the fact that Fort Iron follows (with room to spare) the height restrictions set forth in the City's ordinance. Further, because of the City's conduct, Fort Iron's current plan is to reduce its amounts of on-site high-density material to levels necessary to maintain its operational needs.³

² See December 17, 2021 correspondence and attachments.

³ In no way should this correspondence be construed as an admission as to the propriety of the Order, the City's conduct, or a waiver of Fort Iron's rights.



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With this commitment, Fort Iron cannot conceive of any purpose for the Order or analogous efforts undertaken by the City (and, for that matter, by DTE). Therefore, not only have we met the requirement of the Order, but we also exceeded it and intend to continue to reduce our quantities of those materials through January 2022.⁴

The only response the City has given in response to the data and information that it has received is a demand by your for a “geotechnical report.” For the reasons stated above, such a request is moot. However, there are additional flaws in the request. First, the City is erroneously relying on Chapter 17 of the Michigan Building Code (the “MBC”) to make its request. Section 1701.1 of the MBC states that “the provisions of this chapter shall govern the quality, workmanship and requirements for materials covered. Materials of construction and tests shall conform to the applicable standards listed in this code.” In short, Chapter 17 and the MBC, generally, is a construction-related ordinance. It is inapposite to the current circumstances. Second, we have repeatedly asked for a meeting between the City and Fort Iron’s engineers to discuss the scope of any investigation into Fort Iron’s facility. This meeting was agreed to by the former Corporation Counsel for the City but, since his resignation, the City has ignored our requests for that meeting. As stated in our last letter, we would welcome the opportunity for a well-planned inspection of our facility by the City’s outside engineers along with a cooperative effort to obtain and analyze soil borings.⁵

While the City may consider the forgoing as unnecessarily “lengthy,” we feel it demonstrates Fort Iron’s efforts in furtherance of safety, commitment to the City, cooperation and communication. We hope that you will take the time to truly consider these details and make the correct decision to issue a permanent or temporary Certificate of Compliance with the Order. This will allow the lawyers to move to the sidelines and let the parties and their engineers take the field to address any outstanding issues and reach an amicable understanding.

If the City elects to continue to ignore our pleas, we again ask that the City advise as to precisely what violation the City intends to levy against Hog Brothers Properties, LLC (to date, no tickets have been issued) and advise us as to the next available date for an appeal with City of Detroit’s Department of Administrative Hearings (as referenced at the end of the Order).

⁴ We must also reiterate that, since September 15, when our quantity of high-density materials was nearly twice what they are today, the City had no issue with our operations and reopened the facility based on the Spalding DeDecker report.

⁵ Further, as the City’s outside engineers will attest, scheduling a boring team to perform a single boring (let alone multiple borings over a 7-acre parcel) in less than a month, particularly during the holiday season is impossible. Again, cooperation between the engineers would easily reach this conclusion and find ways to address the issue.



9607 Dearborn
Detroit, Michigan 48209
Phone: 313-357-FORT
Fax: 313-841-8913

As always, Fort Iron remains committed to safety and communication and is available for further discussion at your convenience.

Very truly yours,

Kaveh Kashef

Attachments

cc (via email): Charles Raimi, Esq.
Daniel J. McCarthy, Esq.
Michael R. Turco, Esq. (counsel for DTE Energy)
G2 Consulting
Spalding DeDecker
Frank C. DeNardo, Jr.

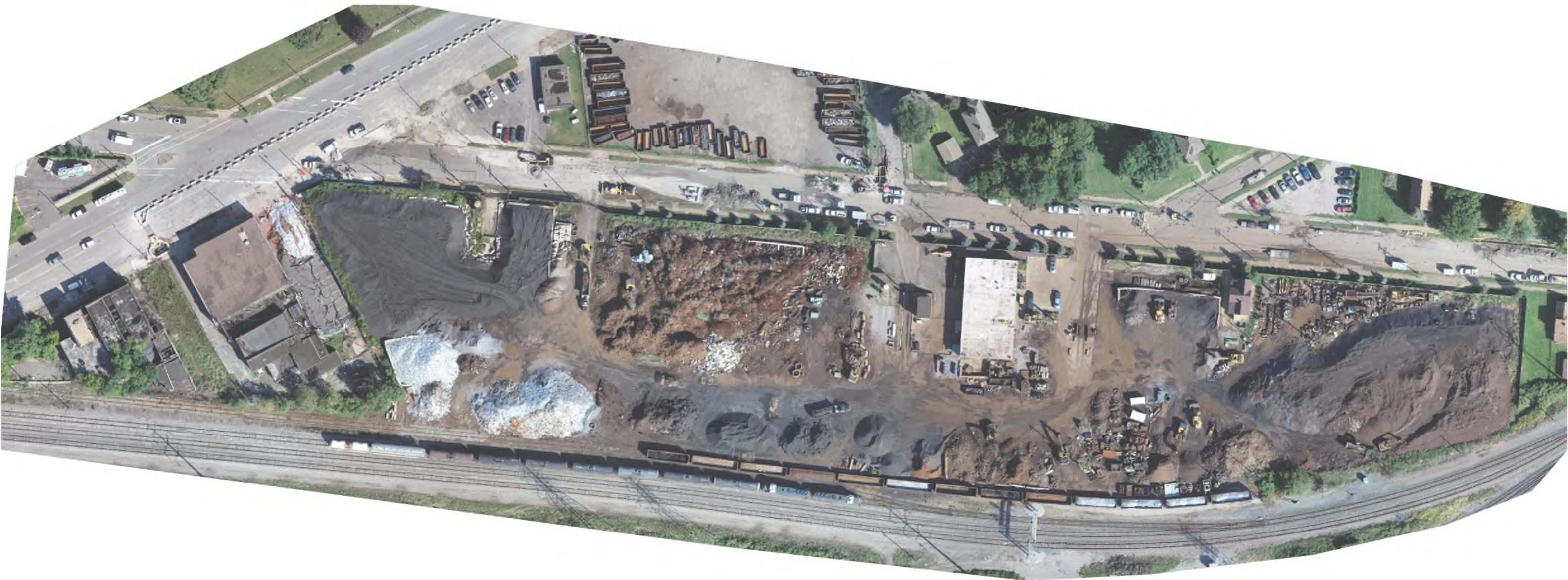




EXHIBIT K

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WAYNE

DETROIT BULK STORAGE, INC., and
DETROIT BULK SERVICES, INC.,

Plaintiffs,

Case No. 21-016869-CB
Hon. Brian R. Sullivan

vs.

CITY OF DETROIT, CITY OF DETROIT
DEPARTMENT OF BUILDINGS, SAFETY,
ENGINEERING & ENVIRONMENTAL
("BSEED"), DAVID BELL, in his official
capacity as Director of BSEED, and CARL CRAIK,
in his official capacity as engineer of BSEED,

Defendants.

JUAN A. MATEO (P33156)
ROBERT E. HIGBEE (P82739)
Attorneys for Plaintiff
300 River Place, Suite 3000
Detroit, MI 48207
(313) 962-3500
mateoja@aol.com
robhigbee@gmail.com

TERI WHITEHEAD (P61908)
Whitehead Law Counsel, PLLC
540 N. Lapeer, Suite 384
Orion Township, Michigan 38362
Ph. 248-925-0530
teriteri2006@gmail.com

Charles N. Raimi (P29746)
Deputy Corporation Counsel
City of Detroit Law Department
Attorney for Defendants
2 Woodward Ave., Ste. 500
Detroit, MI 48226
(313) 224-5505
raimic@detroitmi.gov

AMENDED ORDER GRANTING LIMITED INTERIM RELIEF

At a session of the Court held in the Courthouse
in the County of Wayne, State of Michigan on
12/22/2021 [REDACTED]

Present: Hon. BRIAN R. SULLIVAN
Circuit Court Judge

WHEREAS, the above matter came before the Court on December 7, 2021, and again on December 15, 2021 on Plaintiff, Detroit Bulk Storage, Inc.'s ("Plaintiff" or "DBS") Motion for Temporary Restraining Order and for Preliminary Injunction.

WHEREAS, notice was given to the City of Detroit ("Defendant" or the "City") of this motion and the City has appeared and opposed the motion.

WHEREAS, the Court initially issued an Order granting limited interim relief and is now issuing this Amended Order. IT IS HEREBY ORDERED, that until further order of the Court, and notwithstanding the closure order issued by the City, Detroit Bulk may engage in the following activities on the premises (reference is made to Exhibit A to this Order which is an aerial photograph of 5851 West Jefferson Ave., Detroit, MI ("Property")):

- A. Conduct activities other than receiving, handling, using, and transporting of any materials, such as office operations, investigations, or remediation of the Army Corp property.
- B. Pending further Order of the Court, plaintiff may engage in receiving, handling, using, and transporting of materials only by truck and only as follows:
 1. No ship shall offload materials to the Property, nor shall plaintiffs receive or handle any materials delivered by ship.
 2. Plaintiff has provided to the City a signed and sealed engineering drawing identifying three separate areas on the Property, namely, "Approximate Extents for

Safe Material Storage,” “Approximate Extents of No Load Zone” and “Approximate Extents for Unloading for Open-Graded materials.” Exhibit A.

3. Plaintiff may transport by truck, via Jefferson Avenue, material currently or subsequently stored on the Property into and out of area titled “Approximate Extents for Safe Material Storage,” of Exhibit A.
4. Plaintiff shall not store, transport, or otherwise allow materials onto the areas in exhibit A titled Approximate Extents of No Load Zone and Approximate Extents for Unloading for Open-Graded materials.

IT IS FURTHER ORDERED that DBS may assist in any appropriate and reasonable remediation efforts related to the Property and the adjoining United States Army Corps of Engineer’s Property shall be permitted.

IT IS FURTHER ORDERED that any Blight Tickets issued relating to this Property and the underlying matter, including tickets with numbers 21046853DAH, 21046855DAH, and 21046856DAH, issued to DBS by the City shall be held in abeyance pending the parties’ efforts to resolve this litigation in its entirety. If the parties are unable to fully resolve this dispute, the parties retain all rights and remedies with respect to such tickets.

IT IS FURTHER ORDERED that this ORDER shall not be construed in any manner as an admission of any liability by DBS or the defendants.

IT IS FURTHER ORDERED that neither party waives any rights, claims or defenses against the other.

IT IS FURTHER ORDERED that the hearing set for December 15, 2021 is adjourned until January 19, 2022. The Court will then hear plaintiff’s pending motion for restraining Order unless the parties are able to resolve this dispute.

IT IS SO ORDERED.

This is not a final Order and does not close the case.

/s/ Brian R. Sullivan 12/22/2021
Circuit Court Judge

Approved as to form only:

s/Juan A. Mateo
Juan A. Mateo (P33156)
Attorney for Plaintiffs

s/Charles N. Raimi (w/consent)
Charles N. Raimi (P29746)
Attorney for Defendants

EXHIBIT A

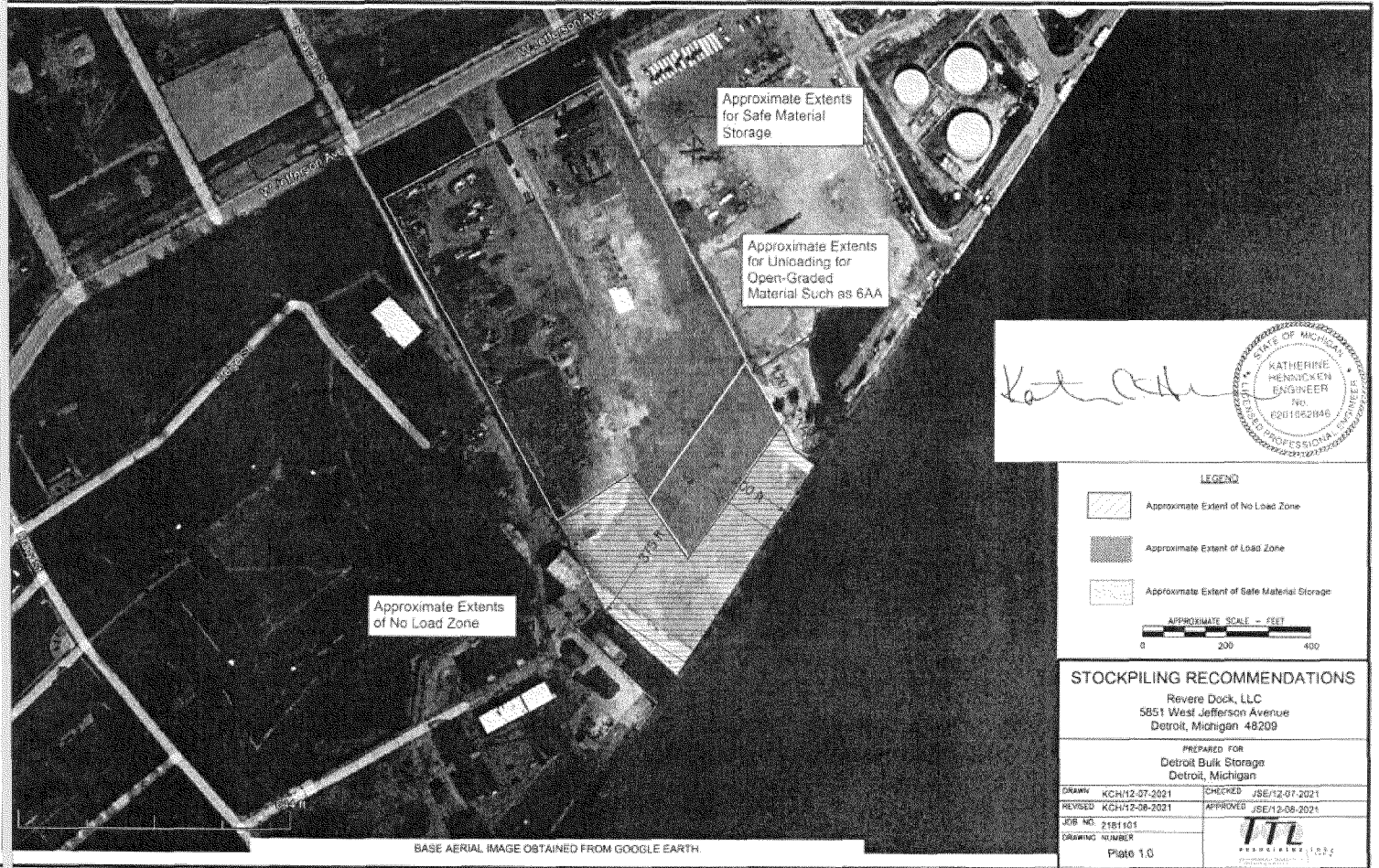


EXHIBIT L

The Detroit News

DETROIT

Heavy material, unstable ground caused SW Detroit road to buckle, city says

Hani Barghouthi The Detroit News

Published 3:59 p.m. ET Dec. 13, 2021 | Updated 8:40 p.m. ET Dec. 13, 2021

Detroit — A soil failure is to blame for a September event in southwest Detroit that caused an 8-foot mound to erupt underneath and around a marijuana dispensary on Dearborn Street, a city investigation found.

The cause had previously been unknown, with experts at the time saying they had seen nothing like it. The Detroit News previously reported that Detroit would partner with utility providers and the state to investigate.

A combination of the weight of materials stored in the area and the ground not being strong enough to hold it led to the rapid swell, Detroit's Chief Operating Officer Hakim Berry said in a statement on Monday.

"While the company storing the material was operating completely legally, this incident and others in southwest Detroit are causing us to review our ordinances as they relate to top material storage, particularly in the southwest area of the city," he added.

Restoration of Dearborn Street is expected to begin in the spring, according to Detroit Public Works deputy director Dayo Akinyemi, while the section of Fort Street that was closed off following the mound's appearance was expected to reopen by the end of the year.

Employees of the Stash Provisioning Center on Sept. 9 had reported witnessing the ground shift the building and raise the road within 25 minutes.

The buckling of the roadway damaged a 16-inch DTE Energy gas main after the owner of the facility said he began to smell gas and contacted the energy provider. During DTE's examination of the building, water was found leaking through the basement and the facility was evacuated, Berry has said.

Around 7 p.m., while the employees were outside, the ground began to swell. The back of the building rose and shifted while the mound appeared simultaneously.

Fire officials and the city's Buildings, Safety Engineering and Environmental Department determined in September that the Stash facility was unsafe and would be demolished.

Crews tore the building down on Sept. 14.

Berry said Monday that a final report is nearing completion, but undergoing legal review.

"Once we're able to release the final report, we will," he said.

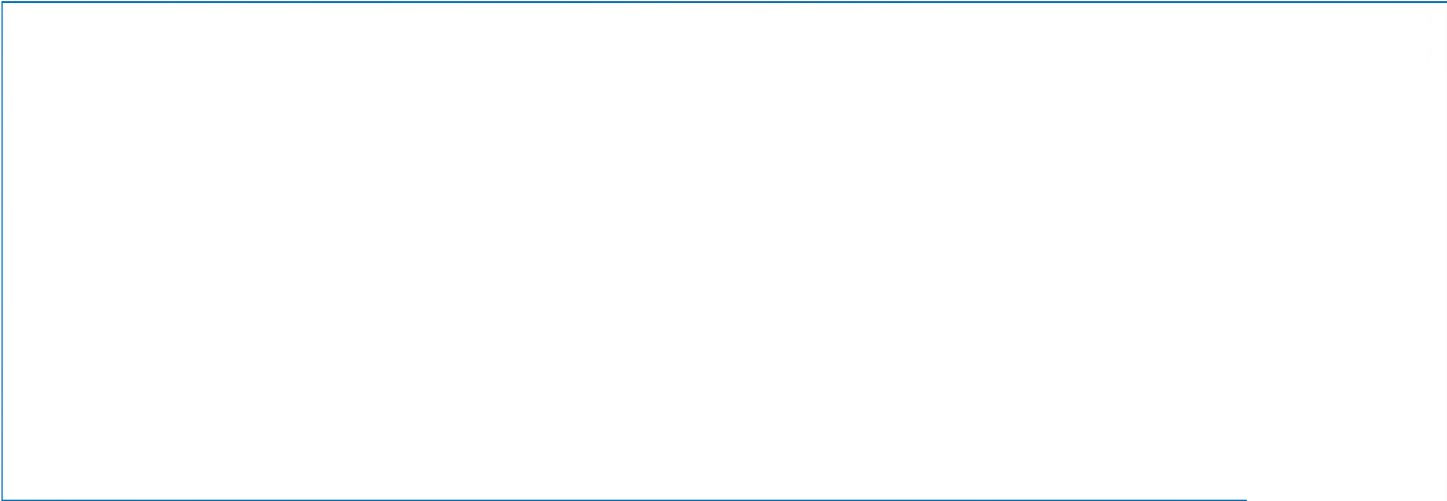
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Buckling land in River Rouge has link to soil shift that destroyed a Detroit dispensary



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After ground shifted and a cannabis dispensary collapsed in southwest Detroit in September, officials began an investigation into the cause.



By: Kim Russell

Posted at 8:13 PM, Dec 13, 2021 and last updated 8:13 PM, Dec 13, 2021

RIVER ROUGE, Mich. (WXYZ) — What caused the soil around a storage lot to suddenly buckle, shifting asphalt and concrete feet higher?

DTE Energy responded to the storage lot on Pleasant Street in River Rouge to investigate a soil failure on Friday, concerned it could impact the integrity of its natural gas system. It turned off natural gas to some industrial customers for safety.

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learned more about it on Monday.

“Chances of derailment, I do not want to happen,” said Hines.

A spokesperson for the Fort Iron and Metal scrap yard in Detroit says it paid to store recycled metal at an independent Bulk Storage Lot on Pleasant Street in River Rouge and has been moving the material off the site after learning about the buckling.

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This is not the first time this company has been associated with a soil shift issue. Fort Iron is the company that was across from Stash Dispensary in Detroit, which was destroyed by a sudden soil shift in September.

City of Detroit COO Hakim Berry tells us Detroit just completed its investigation into what caused the ground to buckle in September at Dearborn and Fort.

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“The business was in compliance. Our ordinances do not require weight as a factor. So these are some things we are updating in our ordinances as the earth is starting to change,” said Berry.

Berry said the City of Detroit is drafting an ordinance change to address this.

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Back in River Rouge, neighbors want to know if their ordinances are strong enough.

“Hopefully something will be done about it soon,” said Hines.

River Rouge City Staff tell WXYZ they are investigating whether there were violations and will be looking at what they need to change to prevent this from happening again.

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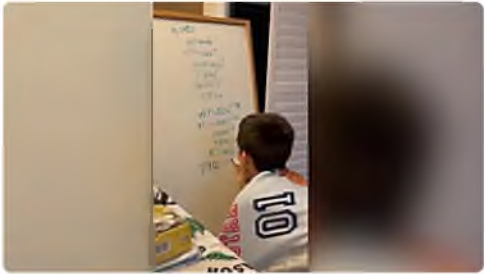


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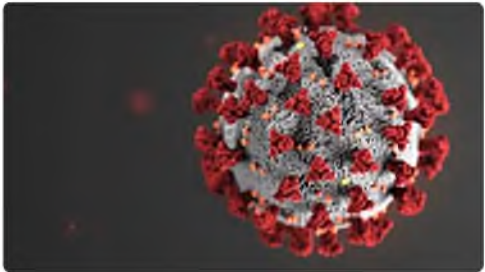


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Tommy Chong

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**DEFENDERS**

Crews begin digging where road buckled in Southwest Detroit, cause still unknown

Investigation is ongoing

Shawn Ley, Reporter

Kayla Clarke, Web Producer

Published: **September 30, 2021, 5:29 PM**

Tags: **Defenders, Southwest Detroit, Road Buckling, News, Local, Local News, Detroit, Wayne County**





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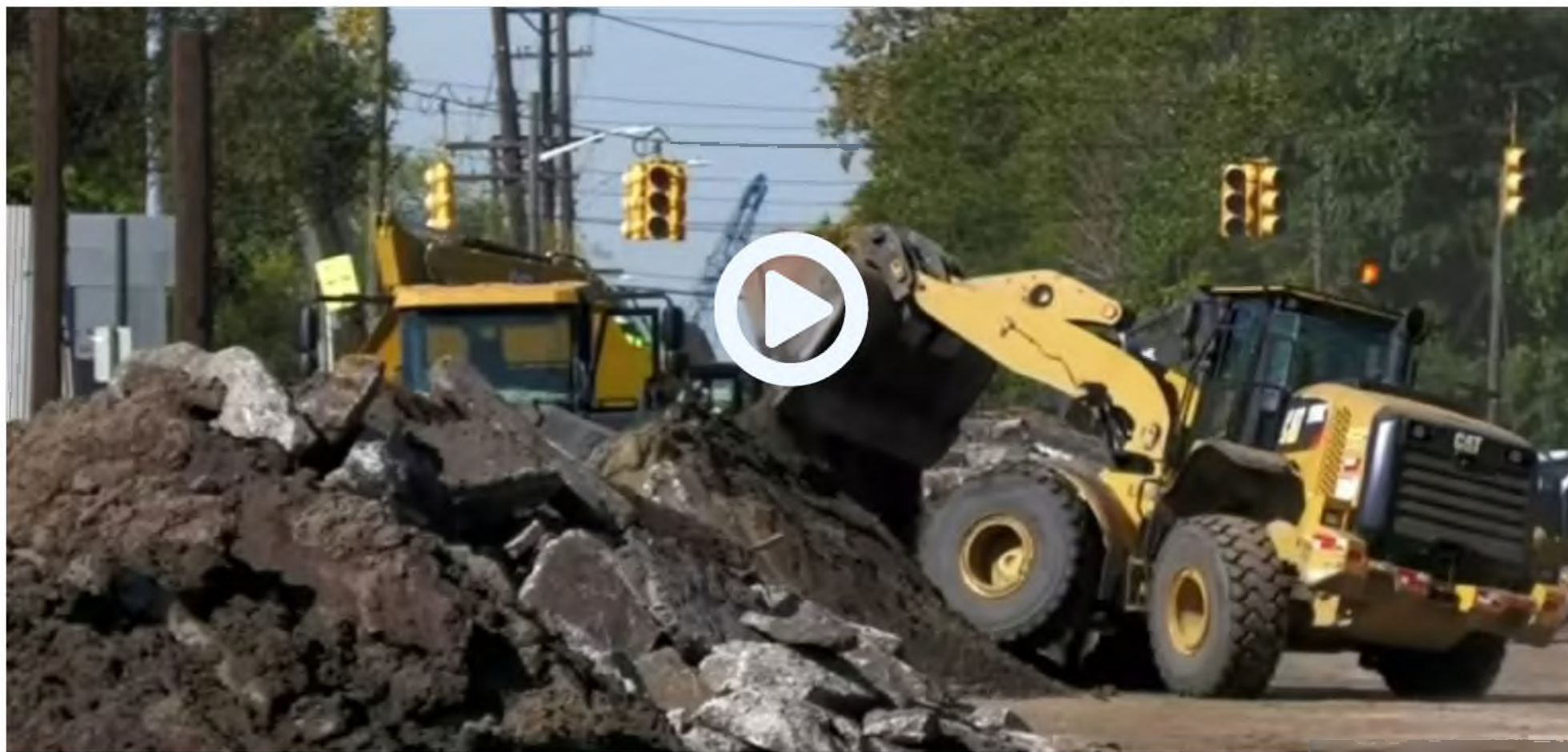
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Nearly three weeks ago, the ground in Southwest Detroit heaved into the air. It buckled the road, destroyed buildings, and left residents with questions as to what caused it.



DETROIT – Nearly three weeks ago, the ground in **Southwest Detroit** heaved into the air. **It buckled the road, destroyed buildings,** and left residents with questions as to what caused it.

There still aren't clear answers as to what caused the destruction. Bernard Juozapaitis lives near where the ground shifted and said he has noticed that large piles of iron and metal at the scrapyards in the area seem to have sunk.



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City of Detroit Chief Operating Officer Hakim Berry said the ground is soft. He is in charge of finding out the cause, cure, and where a ground shift might happen again.

Detroit Mayor Mike Duggan pointed to weight on top of the soft ground. Heavy trucks run in the area nonstop and the metal at Fort, Iron and Metal is piled high.

Berry said they believe the business could be a victim of the soft ground as well. Not the cause.

"It's a victim. You can build a building on soft ground, you just have to know you're building on soft ground," Berry said. "If I lived in this area I would watch and make sure that I don't see any anomalies in my home."

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previous coverage

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- **Progress being made in efforts to secure site of ground shift in Detroit, city officials say**
- **Residents, community leaders call for evacuations in Detroit neighborhood after ground shift significantly damages area**
- **Southwest Detroit gas pipe shut off after unexplained ground shift continues to pose problems**
- **Crews demolish building at site of road buckling in southwest Detroit**
- **Stash Detroit dispensary employees watch as business is demolished after mysterious underground incident**
- **Southwest Detroit gas pipe shut off after unexplained ground shift continues to pose problems**
- **DTE, other agencies investigate apparent underground explosion in Southwest Detroit**
- **Cause of 'strong odor' reported in Southwest Detroit under investigation**

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ABOUT THE AUTHORS:**Shawn Ley**

Local 4 Defender Shawn Ley is an Emmy award-winning journalist who has been with Local 4 News for more than a decade.

email



Kayla Clarke

Kayla is a Web Producer for ClickOnDetroit. Before she joined the team in 2018 she worked at WILX in Lansing as a digital producer.

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